The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 29. NO. 11. TULSA, OKLAHOMA, JULY 31, 1930

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BRANCH OFFICE CORRESPONDENTS

D. H. Bancroft, 538 Ricou Brewster Building, Shreveport, La.
L. E. Bredberg, 610 Petroleum Building, Fort Worth, Texas.
Paul A. Elliott, Chronicle Office, Muskegon, Mich.
Tolbert R. Ingram, 130 State Office Building, Denver, Colo.
Charles E. Kern, 602 Albee Building, Washington, D. C.
Victor Lauriston, Box 136, Chatham, Ontario, Canada.
B. E. V. Luty, Bessemer Building, Pittsburgh, Pa.
A. E. Mockler, Rooms 1919-21, No. 154 Nassau Street, New York, N. Y.
B. D. Stevenson, 1617 Milam Building, San Antonio, Texas.
L. P. Stockman, 522 Union Oil Building, Los Angeles, Calif.
F. B. Taylor, Box 994, Casper, Wyo.
John B. Waldo, Room 1416, No. 6 North Michigan Blvd., Chicago, Ill.
Leon H. Walter, Oil City Derrick, Oil City, Pa.
George A. Whitney, Box 98, Main Postoffice, Toledo, Ohio.
Neil Williams, 1316 Second National Bank Building, Houston, Texas.

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Oil Production Below Allotted Level

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Greater Curtailment Necessary, However, to Balance Previous Overproduction and Permit Reduction in Stocks

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

By Andrew M. Rowley

For the first time since the Federal Oil Conservation Board's Committee on Economics figured the quantity of crude oil production in the United States necessary to meet requirements, the output of all fields of the country last week fell below that allotted average. The underproduction averaged 17,151 barrels daily despite the fact Texas showed an overproduction from its nominated allotment of 82,339 barrels daily. Oklahoma produced an average of 89,860 barrels daily less than its nominated allotment.

The condition which obtains now is further proof of the great improvement in the general situation and of the success which has attended efforts of the industry to solve the overproduction problem. But the situation now is very similar to that of a man who has been seriously ill and has just passed the crisis. He must take exceptional care of himself if he is to regain his normal health. The petroleum industry must keep this very important fact in mind—during the past 117 days there has been a production greater than that recommended by the Committee of the Federal Oil Conservation Board of 9,007,281 barrels or an average of 76,985 barrels every day for the 117 days. It will require many days of a far greater underproduction than that registered last week to balance the account and bring the average daily production down to what the Federal Oil Board's committee recommended. The petroleum industry has passed the crisis of the overproduction situation but it must intensify its efforts to hold output below demand in order that stocks may be reduced and prosperity assured.

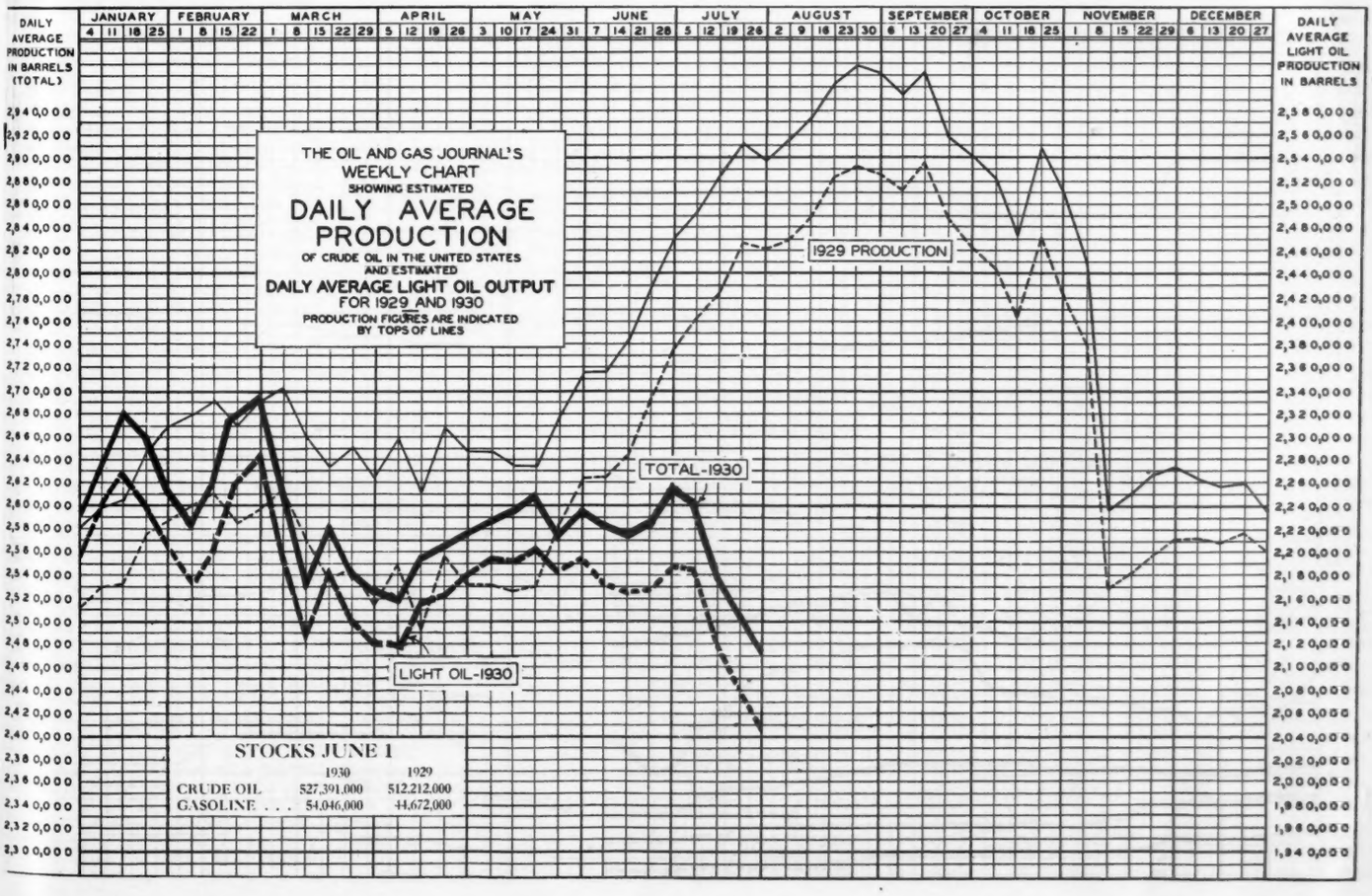
While the Darst Creek situation in Texas (where the proration program has been made ineffective temporarily by court injunction) is a fly in the ointment, close students of that field believe if it is produced to capacity water encroachment will soon solve the overproduction problem there. Texas operators who have been active in endeavoring to curtail production in that State feel the problem will be solved through co-operation of state authorities in enforcement of the provisions of the new pipe line law. Definite action is expected to be taken at a meeting in Austin this week.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended July 26 and a comparison with the previous week follows:

	July 26		July 19	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	77,470	.....	74,165	.....
St. Louis-Pearson	27,165	.....	29,410	.....
Seminole	157,255	.....	177,545	.....
Northern miscellaneous	241,410	.....	243,420	.....
Southern fields	61,840	.....	61,210	.....
Total Oklahoma	565,140	.....	585,750	.....
West Texas—				
Hendricks	70,825	.....	68,660	.....
Yates	107,130	.....	108,956	.....
Remainder	118,317	.....	121,091	.....
Total West Texas	296,272	.....	298,707	.....
North Louisiana	36,895	5,245	34,115	5,265
Arkansas	17,895	37,550	17,825	37,580
North Central Texas	126,225	.....	125,978	.....
Texas Panhandle	96,009	.....	101,726	.....
East Central Texas	40,264	.....	40,037	.....
Kansas	116,945	.....	116,240	.....
Total Mid-Continent area	1,295,645	42,795	1,320,378	42,845
Gulf Coast	.....	203,918	.....	205,148
Southwest Texas	.....	95,906	.....	88,186
Eastern	127,000	.....	133,000	.....
Rocky Mountain area	106,485	.....	105,975	.....
California—				
Santa Fe Springs	111,000	.....	112,500	.....
Long Beach	101,500	.....	100,500	.....
Huntington Beach	28,350	.....	28,250	.....
Elwood	45,500	.....	46,000	.....
Ventura Avenue	48,250	.....	50,000	.....
Seal Beach	20,500	.....	21,000	.....
Remainder of State	165,000	86,000	166,000	86,500
Total California	520,100	86,000	524,250	86,500
Total United States	2,049,230	428,619	2,083,603	422,679
Grand total	2,477,849		2,506,282	

Total Decrease 28,443 Bbls.; Light Oil Decrease 34,373 Bbls.


DAILY AVERAGE PRODUCTION IN BARRELS (TOTAL)
DAILY AVERAGE LIGHT OIL PRODUCTION IN BARRELS
JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
THE OIL AND GAS JOURNAL'S WEEKLY CHART
SHOWING ESTIMATED
DAILY AVERAGE PRODUCTION
OF CRUDE OIL IN THE UNITED STATES AND ESTIMATED
DAILY AVERAGE LIGHT OIL OUTPUT FOR 1929 AND 1930
PRODUCTION FIGURES ARE INDICATED BY TOPS OF LINES
1929 PRODUCTION
TOTAL-1930
LIGHT OIL-1930
STOCKS JUNE 1
1930 1929
CRUDE OIL 527,391,000 512,212,000
GASOLINE . . . 54,046,000 44,672,000

Natural Gasoline Prices Advance

Continue Recovery of Previous Week in Oklahoma With Greater Buying. Other Products Show Little Change

By C. O. Willson

Except for the continued advance in natural gasoline prices in the Oklahoma (Group 3) market prices the first of the week were practically unchanged and apparently would start the new month on the same basis.

Natural gasolines which last week recovered from a low of 4 cents on the AA grade to 4½ cents, moved up to 4¾ cents on Monday and Tuesday with 4½ cents the prevailing market on the B, BB and C grades. While no new large orders have been placed, buying of natural gasolines has been general. Many small refiners have increased their purchases to a car or two a week and the major purchasers in several instances are buying on the spot market in addition to their regular contracts.

The curtailment of refinery runs has increased rather than reduced natural gasoline purchases in several cases. Due to the reduction of their current gasoline output, these refiners are pulling heavily on their storage accumulated early in the year. Natural gasoline is required to bring this gasoline up to the volatility specifications required not only of the export grades but also the domestic grades.

The low tank car prices on all grades of gasoline have tended to emphasize the "competition of quality" concerning which so much has been heard during the past year. This development is unquestionably aiding the natural gasoline manufacturers. With surplus supplies and keen competition in sales to consumers many companies are endeavoring to get or retain their share of the business by offering a better product.

Particular attention is being paid to the 10 per cent point and the ordinary domestic grade now being sold by companies with their own station outlets is better than the U. S. Motor requirements covering the entire distillation range. In many cases the highly advertised trade marked products equal the 60-62 400 endpoint grade except for a slightly higher endpoint. The latter is not significant so far as performance is concerned.

Antiknock Gasolines

Cases are cited in which the trend toward higher antiknock rating has also helped the demand for natural gasolines. One large company which has recently increased the knock rating of its premium and ordinary white gasoline has purchased more natural gasoline. Technologists of the natural gasoline industry for the past two years have contended that their product had special value when properly blended with refinery gasoline to secure a low benzol equivalent in motor fuels. This characteristic is dependent on the hydrocarbon properties of the natural gasolines and the refinery gasolines and to secure the best result it is necessary that the blender have more information regarding the properties of both gasolines than is obtainable from the ordinary distillation test. Some of the larger companies are making a special study of this problem.

This is all a part of a trend toward better and better quality in gasolines which is being reflected in the tank car market. It has meant that the lowest priced material quoted in Oklahoma and other refining groups over the past few months is often "off specifications." A gasoline of low antiknock rating which includes some of the straightrun gasoline refined at several plants is considered poor gasolines by many buyers just as much as if the distillation range, color and odor failed to meet the usual requirements.

In this connection it is claimed by some buyers that some of the refiners keep their best grades of gasoline for their own stations and regular contract jobbers and then dump the remainder of their output on the spot market. This situation, it is contended, has caused the spot market to be dominated by the inferior gasolines and has worked an unwarranted hardship on the refiners who

(Continued on Page 214)

REFINED MARKET BAROMETER

Developments in refined markets over the past week were in the main unfavorable, continuing a trend which has been under way for several weeks. Scattered reductions in gasoline tank car prices became effective although the movement to the domestic trade was generally good and at the peak point of the year for many sellers. Supplies, however, are adequate and competition for spot jobber business continues highly competitive. Natural gasolines outside of the West Coast continued the trend of the previous week and advanced and have now recovered most of the ground lost early in July. The outstanding price decline of the week in kerosenes was along the East Coast where quotations were reduced one-half cent. The product has not improved its weak position in other sections. No important developments were reported in fuel oils, gas oils and distillates. Prices on some grades of steam refined stocks recovered slightly at eastern points from the recent decline, but otherwise the market on lubricants was unchanged. More inquiries and a better movement on wax was reported in several refining groups.

Mid-Continent—Natural gasolines only product which advanced in price. Good movement of refinery gasolines but prices unchanged. Kerosene weak. Fair demand for zero grades of furnace oils. Spot demand for fuel oils slow. Lubricants weak. Better demand for wax.

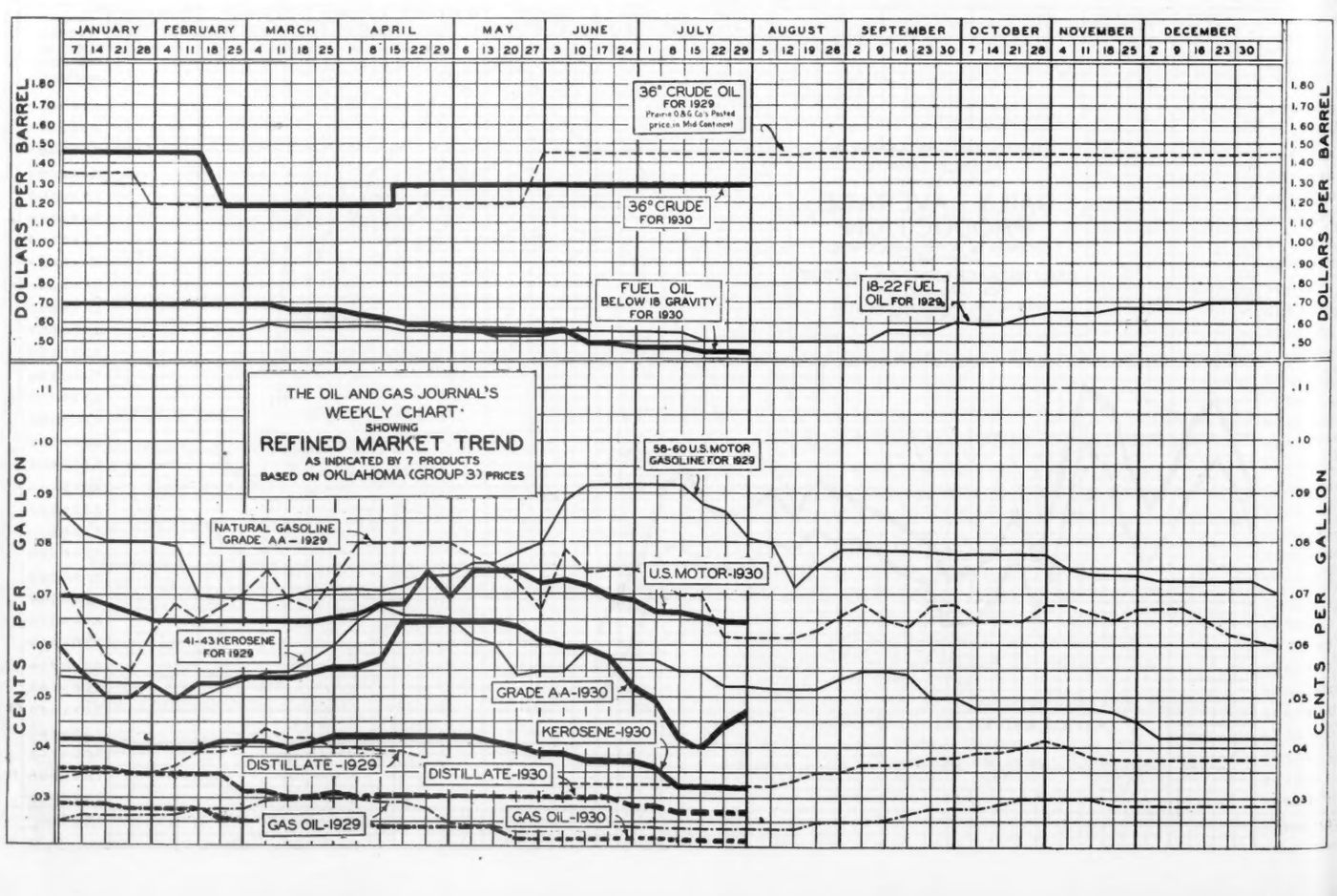
East Coast—Kerosene prices lower. Recovery in cylinder stock and wax market. Refinery gasolines weak with price cutting general. Supplies of fuel oils adequate with no changes in general prices. More inquiries for petrolatum. Export market dull.

Chicago—Heavy consumption of gasoline fails to stiffen tank car market. Kerosene quiet. More inquiries for industrial fuel oils. Other products unchanged.

Pennsylvania—Several grades of gasoline lower. More inquiries for wax. Steadier tone to cylinder stocks and neutral oils.

Gulf Coast—Prices fairly firm on all products.

California—Prices unchanged.



Producers Kept Oil in the Ground

By Rigid Curtailment Measures the Enormous Potential Production of Crude Oil Was Produced as Needed

By James McIntyre

When it is recalled that in the month of June, when there was an actual production of 2,571,000 bbls. per day in the United States and an actual potential of 4,730,000 bbls. a day, 2,158,500 bbls. of crude oil per day was being withheld from industry and kept in the ground it can easily be understood why the production of the United States in the first six months of this year was 16,927,707 bbls. less than it was in the first six months of last year. The total crude oil production of the United States in the first half of the year was 468,893,613 bbls., an average of 2,590,572 bbls. per day, as against 485,821,320 bbls. in the same period last year.

Curtailment Throughout the Year

There was never a day within the six months that all the fields in the country were producing to their capacity. Rigid proration was exercised in the prolific Yates Pool, Winkler County, and Howard and Glasscock Counties in the West Texas fields throughout the period. The same may be said of the Oklahoma City Pool in Oklahoma, while for most of the time all the fields in the Greater Seminole area in Oklahoma, together with all the new pools opened in the State were held down to pipe line requirements. Curtailment was exercised in Sedgwick and McPherson Counties in Kansas and in some outside new pools in that State. The Van Pool in East Central Texas; the Gray County pools in the Texas Panhandle; the principal high-grade oil pools in California, and some of the newer Gulf Coastal pools were held back because the supply was greater than the demand, and late in the half year even the old Bradford and Allegany Pools in the Eastern Fields were under curtailment.

Shut-in Production by States

In June the actual shut-in production in the United States was estimated as follows: California, 495,050 bbls. per day; Rocky Mountain, 45,750 bbls.; Arkansas, 700 bbls.; Louisiana, 2,050 bbls.; Texas, 866,350 bbls.; Oklahoma, 710,250 bbls., and Kansas, 28,650 bbls. and the fields east of the Mississippi River 9,700 bbls. These figures mean that had the wells already completed produced to their full capacity they could have yielded for an indefinite period the added production represented by the above actual shut-in production, and could thus have poured on the market a total of 4,730,000 bbls. a day.

Fortunately for the good of the oil industry common sense prevailed and many fields in the country produced much less oil than in the same period in 1929. The decline in production in some of these pools was partly natural and partly by reason of the curtailment programs in effect. The greatest decline came in the St. Louis-Pearson Field in Oklahoma and the Hendricks Pool in West Texas. The combined St. Louis, Pearson and Maud area in Pottawatomie County, Oklahoma, fell off 15,375,069 bbls., while the Hendricks Pool in Winkler County, Texas, declined 13,330,426 bbls. as compared with its production in the first half of 1929.

Twenty-four prominent pools in the United States showed an increase and some of those were pools opened last year. The Oklahoma City Field in Oklahoma which was opened in December, 1928, did not get well under way until the last half of 1929, and in the first half of that year produced only 760,523 bbls., while in the first half of this year it was permitted to produce 17,876,700 bbls. of its enormous potential indicating an increase of 17,116,177 bbls. over the same period last year. Other prominent pools showing an increase were Konawa, Sasakwa and Earlsboro in Oklahoma; Sedgwick and McPherson Counties in Kansas; Darst Creek, Barbers Hill, DeWalt, Humble, Refugio, Raccoon Bend, Young County, Gray County, Van, McElroy and the Yates Pool in Texas; Bradford and Allegany in the Pennsylvania-New York area, and the Owensboro Field in Kentucky; Lea County, New Mexico; and Kern River, Mount Poso, Elk Hills, Kettleman Hills and Elwood in California.

Pools of Increased Output

Following is a list of more prominent pools in which production in the first half of 1930 exceeded the production in the same period last year. The names of the pools, their production in the first half of this year and their increase over their production in the same period in 1929 are given:

Increase in Production of Major Pools

	Prod. first 6 mos. 1930 (bbls.)	Increase over same period in 1929 (bbls.)
Oklahoma—		
Oklahoma City	17,876,700	17,116,177
Konawa	1,864,827	1,864,827
Sasakwa	1,877,294	1,877,294
Kansas—		
Sedgwick County	3,856,737	434,093
McPherson County	2,730,513	2,702,389
Texas—		
Darst Creek	3,346,149	3,346,149
Barbers Hill	4,168,155	2,910,636
DeWalt	2,081,993	310,129
Humble	2,787,449	1,712,021
Refugio	6,355,041	6,042,868
Raccoon Bend	2,006,055	1,445,499
Young County	2,736,136	1,558,506
Gray County	11,096,176	5,720,574
Van	2,662,971	2,662,971
McElroy	2,539,589	238,716
North Louisiana—		
Caddo	2,253,344	156,980
Oklahoma—		
Earlsboro	14,422,559	3,125,352
California—		
Kern River	3,019,045	126,773
Mount Poso	2,137,347	1,786,315
Elk Hills	3,342,906	106,848
Kettleman Hills	2,483,705	1,638,230
Elwood	7,504,533	3,054,232
Pennsylvania		
Bradford	5,362,000	1,863,000
New York—		
Allegany	1,666,000	279,000

Many Big Pools Declined

Following are the more prominent pools that show a smaller production in the first six months this year than in the same period in 1929. The names of the pools are given together with their production in the first half of 1930 and the decrease in the production as compared with the same period in 1929:

Decline in Production in Major Pools

	Prod. first 6 mos. 1930 (bbls.)	Decrease from same period in 1929 (bbls.)
Wyoming—		
Salt Creek	5,340,677	227,183
Arkansas—		
Smackover	8,164,990	2,033,227
Montana—		
Kevin-Sunburst	1,030,609	34,952
Oklahoma—		
Burbank	2,963,057	1,064,260
Seminole City	3,811,291	2,586,827
Bowlegs	3,770,311	2,860,863
Little River	10,561,516	4,504,134
Searight	1,780,288	88,991
Mission	2,300,736	2,130,589
St. Louis-Pearson-Maud	8,029,390	15,375,069
Bristow	2,409,617	36,779
Cushing-Shamrock	2,534,743	651,373
Tonkawa	1,382,165	479,825
Marshall-Lovell	1,430,586	934,166
Healdton	2,172,119	93,043
Sholom Alechem	2,446,815	85,061
Texas—		
Joe Bruner	4,238,105	1,897,743
Luling	1,735,331	523,031
Mirando	1,718,471	554,170
Hull	1,672,894	79,860
Pierce Junction	2,038,766	669,406
Spindletop	3,055,540	2,711,460
Burkburnett	1,666,570	226,145
Electra	2,058,256	381,232
Archer	3,340,242	223,929
Wilbarger	4,480,052	360,342
Hutchinson County	4,171,083	713,962
Carson County	1,695,957	542,041
Big Lake	2,952,829	224,939
Chalk-Settles	6,657,929	1,083,603
Church-Fields	3,804,598	1,068,249
Hendricks	14,725,251	13,330,426
California—		
Midway-Sunset	12,357,151	160,293
Coalinga	1,688,760	70,541
Ventura Avenue	8,832,120	1,397,809
Fullerton	2,343,108	45,142
Coyote	1,963,062	160,894
Santa Fe Springs	25,923,884	6,914,972
Richfield	2,038,557	959,767
Huntington Beach	5,915,913	2,266,592
Long Beach	18,415,829	14,402,430
Torrance	2,169,980	401,153
Dominguez	1,843,848	43,478
Inglewood	3,418,166	1,092,008
Seal Beach	4,542,379	2,771,001

Taken by major producing areas increases were shown in New York, Pennsylvania, Ohio, West Virginia, Kentucky, Michigan, Indiana, Kansas, Texas Panhandle, East Central Texas, Gulf Coast, Southwest Texas, North Louisiana, New Mexico, while declines are seen in California, Oklahoma, Tennessee, Illinois, North Central Texas, West Texas, Arkansas, Wyoming, Montana, Colorado. It is odd that the states that might naturally be expected to show steady declines are among those that registered an increase, while the greatest producing states were on the list that shows a falling off in output. Oklahoma through the wholehearted efforts of producers backed by the State Corporation Commission, permitted its production to slump 8,240,728 bbls. as compared with its production in the same period last year and California by withholding oil in the ground in nearly all its fields produced 23,481,550 bbls. less than in the first six months of 1929. West Texas dropped 6,708,639 bbls.

Ups and Downs of Production

The following table will show the extent of the decline and the increase in the different producing divisions in the United States compared with the production in the first half of 1929:

Decline in Production

	Bbls.
California	23,481,550
Oklahoma	8,240,728
Illinois	57,000
Tennessee	5,000
Arkansas	3,100,215
North Central Texas	328,237
West Texas	6,708,639
Wyoming	218,113
Montana	163,249
Colorado	405,462
Total decrease	42,708,193

Increase in Production

New York	563,000
Pennsylvania	1,855,000
Ohio	138,000
West Virginia	32,000
Kentucky	414,000
Michigan	873,000
Indiana	17,000
Kansas	2,436,320
Texas Panhandle	5,308,139
East Central Texas	1,903,956
Gulf Coast	9,227,865
Southwest Texas	236,130
North Louisiana	809,784
New Mexico	1,966,292
Total increase	25,780,486
Net decrease in U. S.	16,927,707

Hobbs Pool Promises Big Returns

One of the most important developments in the half year was the Hobbs Pool in Lea County, New Mexico, which

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SUMMARY OF CRUDE OIL PRODUCTION IN UNITED STATES FIRST SIX MONTHS OF 1930

	1926 Prod. first 6 mos. bbls.	1927 Prod. first 6 mos. bbls.	1928 Prod. first 6 mos. bbls.	1929 Prod. first 6 mos. bbls.	1930 Prod. first 6 mos. bbls.	No. of oil wells June 30	Av. dly. prod. per well 6 mos.
New York	922,000	1,101,000	1,174,000	1,609,000	2,172,000	15,400	.78
Pennsylvania	4,236,000	4,750,000	4,829,000	5,489,000	7,344,000	79,075	.51
Ohio	3,583,000	3,842,000	3,594,000	3,252,000	3,390,000	38,995	.48
West Virginia	3,746,000	3,022,000	2,881,000	2,760,000	2,792,000	17,154	.90
Kentucky	3,072,000	3,209,000	3,633,000	3,464,000	3,878,000	18,866	1.14
Michigan	17,000	216,000	211,000	1,273,000	2,146,000	590	20.05
Tennessee	22,700	26,500	24,000	12,000	7,000	.....	....
Indiana	385,500	409,000	496,000	502,000	519,000	2,585	1.11
Illinois	3,848,000	3,587,000	3,223,000	3,067,000	3,010,000	16,600	1.00
Kansas	19,676,445	21,455,000	19,760,362	18,784,674	21,220,994	20,235	5.79
Oklahoma	83,428,423	129,565,618	117,458,526	126,020,255	117,779,527	61,065	10.66
North Central Texas	22,721,170	30,023,634	23,546,887	25,170,461	24,842,224	23,616	5.89
West Texas	6,394,519	15,915,827	58,209,778	65,533,126	58,824,487	2,662	122.09
Texas Panhandle	3,255,532	22,925,094	13,074,052	11,855,526	17,163,665	1,647	57.58
East Central Texas	10,536,616	7,673,768	4,298,691	3,712,775	5,616,731	1,102	28.16
Gulf Coast	17,779,409	28,274,834	23,276,495	26,754,614	35,982,479	3,130	63.52
Southwest Texas	7,101,772	6,713,732	4,840,921	12,039,599	12,275,729	3,259	20.81
Arkansas	31,037,486	21,742,314	16,443,803	13,432,562	10,332,347	4,023	14.19
North Louisiana	9,339,472	9,068,817	8,118,780	6,449,462	7,259,246	3,775	10.62
Wyoming	13,472,498	10,779,747	10,561,844	9,145,923	8,927,810	3,497	14.10
Montana	3,741,345	2,073,040	2,063,213	1,809,606	1,646,357	1,271	7.11
Colorado	1,237,624	1,398,539	1,353,756	1,255,498	850,036	226	20.78
New Mexico	753,466	773,105	404,683	544,826	2,511,118	286	48.50
Utah	.....	8,600	.....	.....	.....	.....	....
California	110,087,644	116,184,628	112,961,846	141,884,413	118,402,863	9,446	69.25
Total	360,395,621	444,738,797	436,438,637	485,821,320	468,893,613	328,295	7.89

Reasons for Socony-Vacuum Merger

President Brown of Magnolia Petroleum Co. and General Counsel P. M. Speer of New York Company Testify at New York Hearing

By A. E. Mockler
Washington Bureau, The Oil and Gas Journal

NEW YORK, July 28.—Consolidation of Standard Oil Co. of New York and Vacuum Oil Co., if effected, will not only create an organization ranking all other units in the oil industry in this country, but would actually rank sixth in world importance as a producer of crude and fourth in refining capacity, according to testimony introduced by the defendant companies in the closing session of the hearing before Special Master Fred L. Williams in federal court here of the government's suit against the two companies. With the closing of the taking of testimony here, the case goes over until September 10, when Mr. Williams will submit to the United States circuit court of the Eighth District, in St. Louis, a printed digest of the proceedings in the New York hearing. Final argument in the government's suit to enjoin the merger will be in Omaha on October 6 and 7.

In resting their case, counsel for the Vacuum and Socony companies submitted a comparative list of oil companies doing a world business in an effort to show that the Socony and Vacuum companies, if merged, would not outrank in importance companies and combines already in operation.

Harold F. Sheets, a director of the Vacuum Oil Co., submitted data showing that the resources of the two companies, if combined, would place General Petroleum Corp., the proposed holding company for the merged concerns, in sixth place as producer of crude and fourth place in refining. Daily refining capacity of the companies listed by Mr. Sheets was given as follows:

Company—	Daily refinery capacity (bbls.)
Standard Oil Co. of New Jersey	718,000
Shell	704,200
Standard Oil Co. of Indiana	404,500
Socony-Vacuum	263,000
Standard Oil Co. of California	244,700
The Texas Company	232,800
Gulf Refining Co.	177,000

Based on 1929 crude oil production figures, Mr. Sheets declared, the principal producing companies rank as follows:

Company—	1929 prod. (bbls.)
Royal-Dutch Shell	175,992,000
Standard Oil Co. of New Jersey	101,100,000
Gulf Oil Corp.	100,000,000
Standard Oil Co. of Indiana	89,425,000
Standard Oil Co. of California	51,534,000
Socony-Vacuum	57,986,392
The Texas Company	50,675,300

In the above compilation, production shown for Standard of Indiana is gross, Standard of California net, The Texas Company gross, and Socony-Vacuum gross. Net production of the New York and Vacuum companies combined for the year was 44,958,200 bbls. Gross figures, Mr. Sheets explained to the court, include royalty oil bought under contract where the company produced in fields not owned or leased.

Magnolia President Testifies

Another witness for the defendant companies was E. R. Brown of Dallas, president of Magnolia Petroleum Co., a subsidiary of the Standard Oil Co. of New York. Mr. Brown outlined the importance of crude oil supply ownership to an integrated company and stressed the need of Vacuum Oil Co. for an assured supply of crude. Present actual and shut-in production of Standard Oil Co. of New York and subsidiaries, he said, would amply provide for the crude oil requirements of both Socony and Vacuum for a long period in the event that the merger is permitted.

Mr. Brown explained to the court the reasons for the present heavy shut-in production of crude in this country and abroad, stating that in the United States alone approximately 2,100,000 bbls. per day of crude petroleum production is shut in. All of the principal countries have reduced drilling because of the present oversupply of crude, he declared. Standard Oil Co. of New York on June 1 of this year, he explained, was drilling 46 wells, against 75 drilling on June 1 last year, 78 on June 1, 1928, and 152 on June 1, 1927.

Present shut-in production of Standard Oil Co. of New York and subsidiaries amounts to 76,200 bbls. per day, Mr. Brown declared. Of this total Magnolia has 27,700 bbls. and General Petroleum 48,500 bbls. Development of proven but undrilled acreage controlled by Standard Oil Co. of New York, the witness stated, could be increased to more than 280,000 bbls. per day, of which Magnolia would produce 137,300 bbls. and General Petroleum 83,575 bbls. Thus, he concluded, crude oil resources of Standard Oil Co. of New York would be sufficient to supply both Socony and Vacuum with an ample supply of crude to take care of their marketing requirements in the United States and abroad.

Standard Oil Co. of New York and subsidiaries, aside from Magnolia and General, own 280,000 acres of unproved land, Mr. Brown stated, while Magnolia has 3,600,000 acres and General Petroleum 73,000 acres, all of which is potential oil-producing territory.

Stations Owned

Peter M. Speer, a vice president, director and general counsel for Standard Oil Co. of New York, outlined the reasons for the proposed Vacuum-Standard of New York consolidated while on the stand. Included in the testimony of Judge Speer was a statement that as of December 31, 1928, bulk gasoline stations owned by Standard of New York and Vacuum in New York State and New England aggregated 547, against 1,541 oil stations owned in the same territory by competing companies. At the close of 1918, he stated, Standard of New York owned 512 such stations in this territory, while competing companies owned 160. During the first four months of 1930, he declared, the sales of gasoline by Standard Oil Co. of New York in New England territory accounted for but 32.7 per cent of the total sales by all companies in this area, against 35.3 per cent in the corresponding period of 1929. Previous testimony introduced by the defendant companies had shown a steady dwindling in Socony's percentage of total business in the area during recent years.

Intensified competition in New York State and New England, Judge Speer stated, has taken the form of service station construction by competing companies, which has forced Socony to do likewise in an effort to maintain its position in the market. Originally, he declared, the sales policy of the New York company was to supply its pumps to independent station operators, but competing companies succeeded in taking away many of these outlets and to protect its volume Socony embarked upon a program of station construction. Notwithstanding this departure, he added, the major proportion of its retail gasoline outlets are still independent dealers. Judge Speer also stated during his testimony that the policy of the New York company is to refuse to sell further gasoline to dealers who sell the product at prices lower than the posted service station schedule named by Socony.

No One Can Dominate

Outlining the history of the New York company, Judge Speer stated that Socony's principal growth was attained in the past 12 years. Expansion was undertaken in 1917 by the acquisition of a stock interest in Magnolia Petroleum Co., he said. Since that year, Standard of New York has been consistently acquiring oil acreage, has expanded its refinery output, and has steadily widened its wholesale and retail marketing activities both at home and abroad.

Judge Speer reiterated the testimony of previous witnesses to the fact that under present conditions in the petroleum industry it is impossible for any one company to dominate the market in New York and New England. Recent expansion by Socony and the proposed consolidation with Vacuum, he said, are merely an effort on the part of the two companies to consolidate their position and increase the efficiency and economy of their operations.

General Petroleum Corp., the merged company which will result from the consolidation of Standard Oil Co. of New York and Vacuum Oil Co., if finally approved by the Government, will establish a national company for the production, refining and distribution of gasoline and all refined products, the witness stated. This, he declared, will be undertaken in an effort to offset the decreasing percentage of business done by the two companies in their "home territory"—New York State and New England—lost through the inroads of competing companies.

"We aim to extend our marketing facilities to make a nation-wide company engaged with Vacuum in the distribution of all petroleum products," he said. "We wish to reach that ideal condition already reached by two of our chief rivals."

Competitive Situation

Judge Speer also discussed the competitive situation between the New York Standard company and Royal Dutch-Shell, citing increasing domestic as well as foreign competition with this company

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Oil Running Through Pure-Van Line

Eighteenth Trunk System From Outside Gulf Coast District to the Coast Now Carrying Crude From Van Pool

By Neil Williams

HOUSTON, Tex., July 28.—With the receipt of the first oil at Smiths Bluff through the new line of the Pure-Van Pipe Line Co. from the Van Field of Van Zandt County, another large carrier of inland-produced crude has been added to the long list of those which find outlet at some Gulf Coast port.

First oil was run through the line the past week, marking completion of the only pipe line outlet for the Van Field, which, although nine months old and one of the largest potential producers of Texas, has depended until now entirely on tank car movement and storage to handle its 25,000 bbls. daily choked in production.

The line, extending from the field, located in East Central Texas, to Smiths Bluff, the location of Pure Oil Co.'s large Gulf Coast refinery and terminal, is a fraction under 211 miles long. The actual coastal terminus of the line is the Pure Oil Co.'s tank farm at Nederland, which is near the Smiths Bluff refinery and terminal. The field end of the line is the company's tank farm centering in the Terry, Clowers and Peel farms in the H. A. Horsely Survey of Van Zandt County.

Eighteen Systems

The Van line to the coast represents the eighteenth trunk system from outside the Gulf Coast district terminating on the Gulf of Mexico, pouring an ever increasing flow of crude into the large refineries of this area or into water terminals for movement by tanker to the Atlantic Seaboard or to other countries.

The quantity of oil which now can be carried into the Gulf Coast by pipe line, not including the lines from Gulf Coast fields, totals between 750,000 and 800,000 bbls. daily, based on the maximum capacities of the eighteen trunk systems. The Van line will provide between 40,000 and 45,000 bbls. of this amount when all six of the pump stations planned for the line are completed.

Pump stations have been built along the line so far at Rusk, Cherokee County, and Woodville, Tyler County, in addition to the station in the Van Field. Three other stations eventually may be built including one at Bullard, Smith County; Diboll, Angelina County; and Nona, Hardin County.

Construction of the Van line embodied one of the most recent developments in pipe welding practices, including the use of the center ring with middle bead. This practice known as the Smith weld, has been adopted by the A. O. Smith Corp. of Milwaukee, Wis., manufacturers of the pipe laid on the line.

Electrically Welded

The line, except for a 19½-mile stretch from the field to Chandler, was entirely electrically welded in the field by crews of the A. O. Smith Corp. Ditching, lowering of pipe and other work incidental to the laying of the line was done by the Pure-Van Pipe Line Co. Thirty-foot joints of 10¾-inch (O.D.) pipe with .307 inch walls were used on the job. All joints were belled at both ends. In making the weld connections, the center ring was inserted on the inside at each connection with the belled ends of the connecting joints overlapping the ring to the middle bead. The ring then was welded into position, after which the complete weld was made. By use of this center ring, double strength is provided at each connection.

The stretch not included in this welding job was the original line laid from the field to loading racks at Chandler. The field at its opening was not on a railroad and to move the crude a 70-car rack was built at Chandler on the Louisiana Southern Railroad and the 19½-mile line laid to that point. Thus the

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Venezuelan Production Shows Decline

First Half of 1930 Indicates That Figures for Year Will Show Drop of 3,500,000 Bbls. as Result of Drastic Curtailment

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, July 28.—Drastic curtailment programs put into effect in Venezuela in the first half of 1930 are beginning to be reflected in production figures, and indications are that output for the full year will show a material decline from 1929 totals. Production during the first six months of the year (partly estimated) was 64,500,000 bbls., against more than 68,000,000 bbls. produced in the first half of 1929.

Large operators in Venezuela have started to draw heavily on their accumulated storage stocks, shipments during the first half of the year running substantially in excess of those for the first six months of 1929, and during the latter part of the second quarter of the current year, running well ahead of production totals.

Production and shipments for the first two quarters of the year in round numbers (partly estimated), with comparison with production and shipment figures for the corresponding quarters of 1929, follow:

	Barrels of 42 U. S. gallons			
	Production		Shipments	
	1930	1929	1930	1929
First quarter	33,300,000	32,500,000	31,900,000	28,450,000
Second quarter	31,200,000	35,500,000	32,800,000	30,500,000
Total	64,500,000	68,000,000	64,700,000	58,950,000

Output in Venezuela during the first quarter of the year continued on the upgrade, largely due to increasing operations on the part of Dutch-Shell subsidiaries, American producers having started their curtailment program early in the year. During the second quarter, however, Dutch-Shell fell into line and cut output, and with the principal American companies continuing to slacken operations, an appreciable drop in output was recorded.

Drilling Operations Cut Also

The drop in production totals for Venezuela has been paralleled by a reduction in working forces and drilling operations. At the start of June this year there were only 32 wells drilling in Venezuela, as contrasted with 50 wells drilling on the same date last year and 40 on June 1, 1928. Production of proven fields was curtailed sharply in a number of instances.

The reduction in output has enabled large holders of Venezuelan oil to cut into their storage stocks somewhat, and further material reduction of stored stocks is looked for, with a probable cessation of construction of additional tankage. As of January 1, this year, there was steel storage in Venezuela for more than 26,500,000 bbls., and there has been comparatively limited additional storage construction during the first six months of the year. At the close of 1928, steel storage in Venezuela aggregated in excess of 22,300,000 bbls.

Cessation of additional development work in Venezuela was indicated last year when the principal factors active in that country announced that they had discontinued additional lake tanker construction. The capacity of the Venezuelan oil output is largely limited by the number of tankers in service on Lake Maracaibo and other shallow waters used to transport crude to tidewater, for shipment to Pan American and Shell plants at Aruba and Curacao, D. W. I., and refineries in the United States and abroad. During 1928, an extensive tanker-building program was carried out by major factors operating in Venezuela, and at the close of 1929 there were 77 shallow draft tankers in operation. The daily average tanker capacity at present is approximately 375,000 bbls. per day, compared with 320,000 bbls. daily in 1929 and 200,000 bbls. per day in 1928. Although the capacity of the fleet is taxed by the amount of crude now being shipped out, the principal companies controlling the large bulk of Venezuelan production have a "gentlemen's agreement" prohibiting additional lake tanker building until further notice.

Venezuela's Rise Meteoric

Venezuela has experienced a meteoric rise among the world's principal producing countries, increasing from an output of 225,783 bbls. in 1917, the first year of recorded output, to 137,472,064 bbls. last year. From 1917 to the close of 1929, Venezuela had produced a total of 382,673,066 bbls. of crude, of which 348,619,533 bbls. were exported, indicating 34,053,533 bbls. left in storage, and used for domestic consumption, field work, etc., during the period. Of this total output, however, 306,128,899 bbls. were produced in the three years ended 1929, with 281,334,080 bbls. of the total exports shipped during that period. Veteran oil men say that Venezuela's potential output, while still undefined, is enormous, and the country is regarded as one of the world's most important oil reservoirs.

The Department of Commerce is authority for the following data covering Venezuela's oil history from 1917 to the end of 1929:

(Barrels of 42 U. S. gallons)

Year—	Production	Per cent gain over previous year	Exports	Per cent gain over previous year	Difference placed in storage, consumed or refined
1917	225,783	....	57,096	....	168,687
1918	367,304	62.23	143,880	152.00	223,424
1919	258,478	*....	14,309	*....	244,169
1920	526,119	103.56	.....	*....	526,119
1921	1,498,052	184.74	997,643	....	500,409
1922	2,397,602	60.05	1,813,452	81.77	584,150
1923	4,757,152	98.45	3,344,428	84.42	1,412,724
1924	9,152,278	92.39	8,553,550	155.75	598,728
1925	20,450,091	123.08	18,927,417	121.29	1,522,675
1926	36,911,310	80.50	33,433,678	76.64	3,477,632
1927	63,133,941	71.04	55,927,007	67.28	7,206,934
1928	105,522,892	67.11	97,900,141	75.04	7,622,751
1929	137,472,064	30.28	127,506,932	30.24	9,965,132

*Decrease.

Royal Dutch-Shell has continued the dominant producer in Venezuela during the first half of the year, with Standard of Indiana (through Pan American) ranking second, and Gulf Oil Corp. third.

The importance of Venezuelan production in United States markets is illustrated by the fact that more than 70 per cent of all oil imports into the United States during 1929 came from Venezuela, although it is believed that this percentage will be decreased during the current year.

Independent oil producers in this country, who some months ago waged a determined, although unsuccessful, campaign for a tariff on imports of crude petroleum and refined oils, directed most of their attack on Venezuela as a disturbing factor in American markets.

Imports

The extent to which American companies prominently identified with Venezuelan operations have readjusted their production and imports of Venezuelan crude in conformity with the conservation policies outlined for the domestic branch of the industry is shown by the fact that imports of crude from Venezuela for the first five months of 1930 totaled only 15,346,000 bbls., as contrasted with 25,676,000 bbls. in the corresponding months last year. Some of this drop, of course, is due to the fact that Pan American is now operating its 110,000-bbl. refinery at Aruba, D. W. I., and that crude oil which that company was shipping into the United States for refining during the first six months of 1929 is now being handled at the Aruba plant.

Total imports of crude for the first five months of the year, according to reports of the Department of Commerce, showed a sharp falling off, all shippers, with the exception of Colombia, registering declines. Imports for this period, with comparisons in 1929, follow:

(Barrels of 42 U. S. gallons)

From—	First 5 months 1930	1929
Mexico	2,789,000	4,293,000
Venezuela	15,346,000	25,676,000
Colombia	6,020,000	5,725,000
Other countries	1,208,000	1,567,000
Total	25,363,000	37,261,000

This tendency, if continued throughout the remainder of the year, as now appears probable, will result in an appreciable lightening of the burden afforded by imported crude, although the benefits accruing from this development will be offset in some measure by the heavier imports of gasoline and other refined products.

REFINERY QUOTATIONS IN GULF COAST AREA STEADY

HOUSTON, Tex., July 29.—Although refinery quotations continued stationary, an increasing confidence in further improvement of the Gulf Coast market was indicated at the opening of the week. The feeling was general among all products.

A strengthening of markets in other areas, together with a fairly healthy situation on the Gulf Coast as far as stocks are concerned, are responsible to a large extent for the better tone. As to actual movements, there has been no important change.

Pale and red oils continue to find only a routine demand but this is steady and evidently of sufficient volume to maintain a firm price structure. Fuel oils are not particularly active but the situation is well in the hands of the sellers who apparently are not overly anxious to move their material. Gasolines are getting a good local tank car demand.

TABLE 1—VENEZUELAN PRODUCTION

Venezuelan Crude Petroleum Production During the First Six Months of 1930 as Compiled by "O'Shaughnessys' Oil Reports" by Companies, with Comparisons for the Corresponding Months in 1929

(Barrels of 42 U. S. gallons)

Company—	January		February		March		April		May		June	
	1930	1929	1930	1929	1930	1929	1930	1929	1930	1929	1930*	1929
V. O. C.	3,797,761	4,103,720	3,640,616	3,607,811	3,787,378	3,790,306	2,969,882	3,894,294	3,105,103	4,021,487	3,000,000	3,839,835
Lago	3,292,649	3,476,971	2,949,800	3,074,790	3,232,060	3,223,737	3,123,600	3,195,878	3,166,960	3,165,355	3,100,000	3,203,294
Gulf	1,942,281	2,477,975	1,744,419	2,345,820	1,924,113	2,328,800	1,878,380	2,612,000	1,938,671	2,610,100	1,850,000	2,637,100
Caribbean Pet.	1,711,200	633,735	1,547,000	550,004	1,696,134	632,307	1,617,150	884,880	1,580,039	1,469,493	1,450,000	1,598,400
Creole	479,453	638,630	425,053	578,690	478,532	536,500	470,009	577,296	472,197	582,600	465,000	625,900
Colon	111,000	.....	408,551	.....	591,641	.....	457,093	.....	399,912	.....	425,000	.....
B. C. O.	143,629	159,992	146,946	138,972	172,624	154,825	161,931	159,111	210,637	161,129	200,000	168,930
General Asphalt	40,300	30,500	36,800	30,000	37,800	28,000	46,000	28,000	44,900	28,000	43,500	27,500

*June, 1930, The Oil and Gas Journal estimate.

TABLE 2—VENEZUELAN SHIPMENTS

(Barrels of 42 U. S. gallons)

Company—	January		February		March		April		May		June	
	1930	1929	1930	1929	1930	1929	1930	1929	1930	1929	1930*	1929
V. O. C.	3,729,102	3,536,996	3,482,192	3,360,782	3,509,800	3,629,800	3,240,100	3,170,319	3,260,900	2,983,567	3,200,000	2,680,120
Lago	3,377,011	2,563,587	3,076,400	2,375,631	3,366,600	2,180,355	3,246,100	2,427,257	3,296,100	2,801,048	3,226,000	3,107,296
Gulf	1,914,000	2,331,000	1,779,000	2,114,000	1,922,000	2,428,800	1,987,000	2,472,000	2,159,000	2,484,000	1,900,000	2,514,000
Caribbean Pet.	1,216,000	748,300	849,744	502,186	908,000	553,983	1,228,200	790,223	1,212,100	1,239,165	1,200,000	1,480,200
Creole	354,000	630,000	586,000	520,821	399,000	471,800	546,000	596,000	501,000	578,000	480,000	588,000
Colon	19,000	.....	316,530	.....	518,000	.....	558,000	.....	462,500	.....	425,000	.....
B. C. O.	134,560	144,300	149,300	128,936	166,500	144,825	156,100	177,650	185,100	161,385	176,000	167,280
General Asphalt	37,000	28,000	27,000	30,000	31,200	28,000	56,000	28,000	56,200	28,000	52,000	27,500

*June, 1930, The Oil and Gas Journal estimate.

Operating Conditions in Hobbs Pool

While Area Has Many Things in Common With Winkler County, Operators Are Encountering Somewhat Different Problems

By L. G. E. Bignell
Petroleum Engineering Editor

With each new field that is opened for development there seems to be presented to the production and drilling men problems that are different in many ways from those encountered in other areas. The technique of drilling and producing wells has been advanced greatly in the past few years, but there still seems new problems to be solved and from a survey of the Hobbs Pool in Lea County, New Mexico, perhaps some of these problems will have their solution accomplished there.

This pool has many things in common with other Permain Basin areas but checking back over the past development of oil reservoirs in all parts of the country it seems hard to find any two of them that were just alike. Nature presents a never ending combination of forces for man to overcome in his search for mineral or oil, but by applying the best practices of these older fields he is able now to bring gas and oil from formations at depths hardly dreamed of a few years ago.

In drilling wells in the Hobbs Pool, gas under varying pressures and volumes is found in several formations and some of this gas is under pressures much higher than the normal pressure for the depth would seem to indicate. In Amerada Petroleum Corp.'s No. 1-A State, the shutin pressure at 3,130 feet depth was 1,400 pounds at the casinghead. Tidal Oil Co.'s No. 1 W. D. Grimes, total depth 4,160 feet, registered a shutin pressure of 1,150 pounds on the casing when the gates were first closed which built up to about 1,300 pounds within 15 hours. The tubing registered a pressure of 425 pounds on this well when it was shut in. Considering the energy that must be lost in flowing this oil from a depth of about 4,160 feet on the W. D. Grimes' well the 1,400 pounds casinghead pressure seems rather high.

Depth Pressure Gradients

R. Van A. Mills states in the discussion of a paper on "Pressure, Temperature and Gas Oil Ratio in Oil Sands," before the A.I.M.E. meeting held in Tulsa, October, 1928, that he has tried "to work out depth pressure gradients for different localities, and then calculate the initial pressures in a field according to the best field practice to get the natural pressure record in the depth of the wells. * * * In the State of Oklahoma it is surprising how closely the depth pressure figures check. Taking the State as a whole—outside of Osage County—we have a depth pressure gradient of 42.16 pounds for every 100 feet of depth of wells from 2,000 to 3,000 feet deep. These figures check so closely, I believe we can use them to estimate the natural rock pressure at different depths. At depths below 4,000 feet the pressure gradient is 33.49 pounds per 100 feet of depth."

Pressure gradients have not been worked out for the Permian Basin pools but work is now being carried on in the Yates area that may be of future value in explaining why wells in the limestone formations show these rather high shutin pressures. It may be due to the character of the formation, that is changes set up when anhydrites were laid down over producing zones, or to bottom and edge water being under high hydrostatic head.

The surface water in this area found at about 90 feet is apparently in the form of a flowing underground stream that heads in northern New Mexico or southern Colorado and flows southward to finally discharge along the Balcones fault zone in Texas. This sheet water has not been traced continuously through this area but there are numerous wells drilled to water of this general character all over this plateau country of New Mexico and Texas which leads to the assumption that it is connected with the outcrops from which water flows into the Devils River, Texas, and along the Balcones fault area.

Formations Present Mud Problems

Because of these gas zones and porous streaks found in drilling these wells rotary fluid conditions vary very widely from the use of clear water in some places to the use of 14-pound mud in others.

It has been found desirable to drill through the so-called "air pockets" found at from 2,300 to 2,400 feet with clear water, but below that point mud with an ever increasing weight up to 14 pounds per gallon is used and because there are many porous streaks where large quantities of this mud enter the formation and is lost conditions at the well change very rapidly.

The 9⅝-inch casing is usually set at about 2,750 to 2,800 feet and cemented. In the 8⅝-inch hole drilled below that casing point oil and gas is encountered at about 3,100 feet. This is sweet oil and is not being produced at present although it is planned by most companies to drill other wells to this production later.

Oil and gas is next found at 3,275 feet and again at 3,385 feet, with a big gas showing at 3,670 feet. This has been esitmated at from 50,000,000 to 60,000,000 feet. It is below this gas showing about 200 feet that the 6⅝ or 7-inch casing is being set and cemented, but it is now planned to set this last string of casing much lower, perhaps as deep as 4,100 feet, so that the upper portions of the lime pay may be cemented off and the gas there conserved for use in driving the oil out of the lower portion of this formation.

Heavy mud from any of these oil and gas showings may be badly gas cut and requires a lot of handling and working to again prepare it for use in the well.

On the California Co.'s No. 2 State, 14-pound mud was cut to weigh only 6 pounds per gallon after passing through the drill pipe and returning to the surface while drilling through one of these lower oil gas showings. This gas cut mud was treated by "gunning" it into the slush pit, using one of the large slush pumps to circulate the material.

"Gunning" Practiced

"Gunning" as practiced in Hobbs area consists of spraying the mud in a small stream under high pressure over the surface of the mud in the slush pit and by contact with the air and striking against the mud body in the pit the gas bubbles are broken up and the gas released, with the result that the weight of the mud is brought back to about 12 or 13 pounds per gallon.

Examination of this mud indicates that it is impregnated with oil and there seems little doubt but that this oil in this heavy mud mixture increases the film tension of the mud film that forms around the individual gas bubble and because of the toughness of this membrane it is difficult to break the bubble and release the gas.

Some operators have been experimenting with vibrating screens trying to break this film around the gas bubble and at the same time remove the largest part of the cuttings from the well. Screen of 30 and 40 mesh was used in this test and quite an appreciable amount of cuttings removed. The mud was improved by this treatment also.

It has been suggested that re-agents may be added to the mud to reduce film tension without deteriorating the mud in its other characteristics.

Aerator used in Hobbs Field to break up gas bubbles in rotary mud. The mud is discharged from the pipe at the top of the aerator and flows down over a number of decks and back into the slush pit.

The petroleum industry could profit by the work that has been done in the development of the flotation process in ore dressing and as Hobbs Field is located reasonably close to milling operations in New Mexico and Arizona and a number of flotation experts have offices in El Paso, Tex., it would seem that it is ideally located to draw upon these men for their experience and apply to mud handling problems methods and equipment that has proven of value in the ore dressing and concentration mills.

Blowout Dangerous

Because of the danger of blowout due to low weight mud some companies hold in reserve in 1,000-bbl. bolted steel tanks a quantity of mud in addition to that which is in actual circulation through the slush pumps.

To prevent loss of this high priced mud that is made with an admixture that costs as high as $55 per ton, and the wells use from 100 to 300 tons of it in completing the hole, it has become a general practice to have the slush pits covered with a coating of cement. This cement is being applied by the Halliburton Oil Well Cementing Co. who use one of its high pressure pump outfits to spray the cement over the banks of the dug pit until a liner 1 to 2 inches thick has been formed on sides and bottom.

These slush pits are dug and blasted into caliche that forms the first layer below the top soil and this caliche stratum is quite porous in places and mud has entered into it in appreciable quantities so the cementing of the slush pits is justified, especially when the handling of from $5,500 to $16,500 worth of mud per well is considered.

Casing Program

Most wells set about 200 feet of 15½-inch 52-pound casing for the surface water shutoff and it is cemented full length and the bottom of the cellar is also cemented.

The next string is about 2,750 feet of 9⅝-inch 40-pound set with from 400 to 700 sacks of cement. The top of this string is provided with a 3,000-pound capacity master gate and above the gate is used some type of blowout preventer. The 6⅝ or 7-inch string is set at about 4,100 feet with about 200 sacks of cement.

The master gate and blowout preventer on the 9⅝-inch are both controlled by separate reach rods that extend from the cellar to the surface alongside the derrick. These reach rods are fitted with some form of hand wheel so that the blowout preventer or master gate can be operated by remote control. Some blowout preventers are steam actuated, but either kind will make tight contact around the drill stem and shut the well in.

In drilling in the 12½-inch hole for the 9⅝-inch casing 6-inch drill stem is used, and either 4 or 4½-inch stem is used in the 8½-inch hole for the 6⅝ or 7-inch casing.

When the well is completed and the long string of casing set a string of 3-inch tubing will be run to a point about 15 feet off bottom. This tubing is not set with packer and is openended. At the top it is provided with control valves so that the rate of flow from the well may be regulated at all times. In testing wells in this area they will be permitted to flow open for three hours through this 3-inch string of tubing and the well rated upon the amount of oil produced in the last two hours of flow. This gauged amount of oil is multiplied by 12 to give the daily potential of the well.

It is further recommended that in producing these wells that the flow be through this 3-inch tubing only, and that

the control pressure on the formation be so regulated that not over 700 feet of gas per barrel of oil be produced. By this method of producing these wells it is hoped to conserve the gas energy now in the formation and at the same time hold back bottom or edge water as long as possible.

With a limestone formation of the type found in this field this method of production seems most desirable. This lime is evidently quite porous in many places as demonstrated by the tools swinging free in Prairie Oil & Gas Co.'s No. 1 Crump in Section 15-19s-38e, at a total depth of 4,140 feet. The hard shell above the oil in this well, which made about 5,000 bbls. per day initial, was struck at 4,139 feet and after drilling 1 foot the tools swung free and the well was flowing. A similar condition existed in the Mid-West Refining Co.'s No. 1 State, the west offset of the Prairie well.

Equipment Used

With the exception of one or two of the original wells, this field is being drilled with rotary equipment. Humble Oil & Refining Co.'s No. 1 D. A. Bowers in the north end of the field was drilled and completed with a Sheldon rotary outfit. This is the first well completed in the north end of the pool. Other wells on the Getty Oil Co.'s McKinley lease, have been drilled with the Hydrill outfit.

The following list of equipment is typical of an installation on any lease in this pool now and gives some idea of the distribution of costs in drilling wells there:

Excavation for pit and cellar	$ 600
Concrete for piers and cellar	500
125-foot high steel rotary derrick	2,100
Derrick sills, lumber and galvanized iron	2,000
Derrick erection	800
Hauling, total	3,700
1,500-bbl. tank for fuel oil	1,000
1,500-bbl. tank for water	1,000
7,500 bbls. of fuel oil for drilling	7,500
Welding around rig at $5 per hour	1,000
Drilling at $8 per foot—4,200 feet (oil and water furnished)	33,600
Day work coring	1,000
Casing:	
200 feet, 15½-inch, 52-pound	700
3,012 feet, 9⅝-inch, 40-pound	6,000
4,200 feet, 6⅝-inch, 26-pound	6,720
4,200 feet, 3-inch tubing	2,000
Fittings:	
1 Control head	280
1 Manual operated blowout preventer	1,250
2 Drilling valves, 3,000-pound capacity	665
1 9⅝-inch casinghead	150
Valves for 3-inch tubing	400
Oil and gas separator	2,500
Line pipe for lease	1,000
Cementing casing—labor $ 500 material 1,000	1,500
Mud admixture average 200 tons at $55 per ton	11,000
Water system for drilling well	800
Total	$89,765

In addition to this material furnished by the producing company the drilling contractor has an investment of approximately $65,000 in boilers, rotary equipment and slush pumps. He also furnished crown block, wire line, drill pipe, tools, bits and other miscellaneous equipment used around the well while drilling the hole. He gets about $8 per foot for wells in the Hobbs area and it takes about 20 days to complete the 12½-inch hole and 75 days total time to finish the hole.

Cement Admixtures Used

In cementing the casing it is usual practice to use sodium chloride or other compound to accelerate the set of the cement and even with every precaution some shutoffs have not been entirely satisfactory, probably due to the high pressure in the producing zone and the fact that casing is now being set well within that formation. It is also possible that considerable cement may be lost into the formation when this casing is set low. This is one of the new experiences of this field that further knowledge of conditions will overcome.

Miscellaneous Expenses

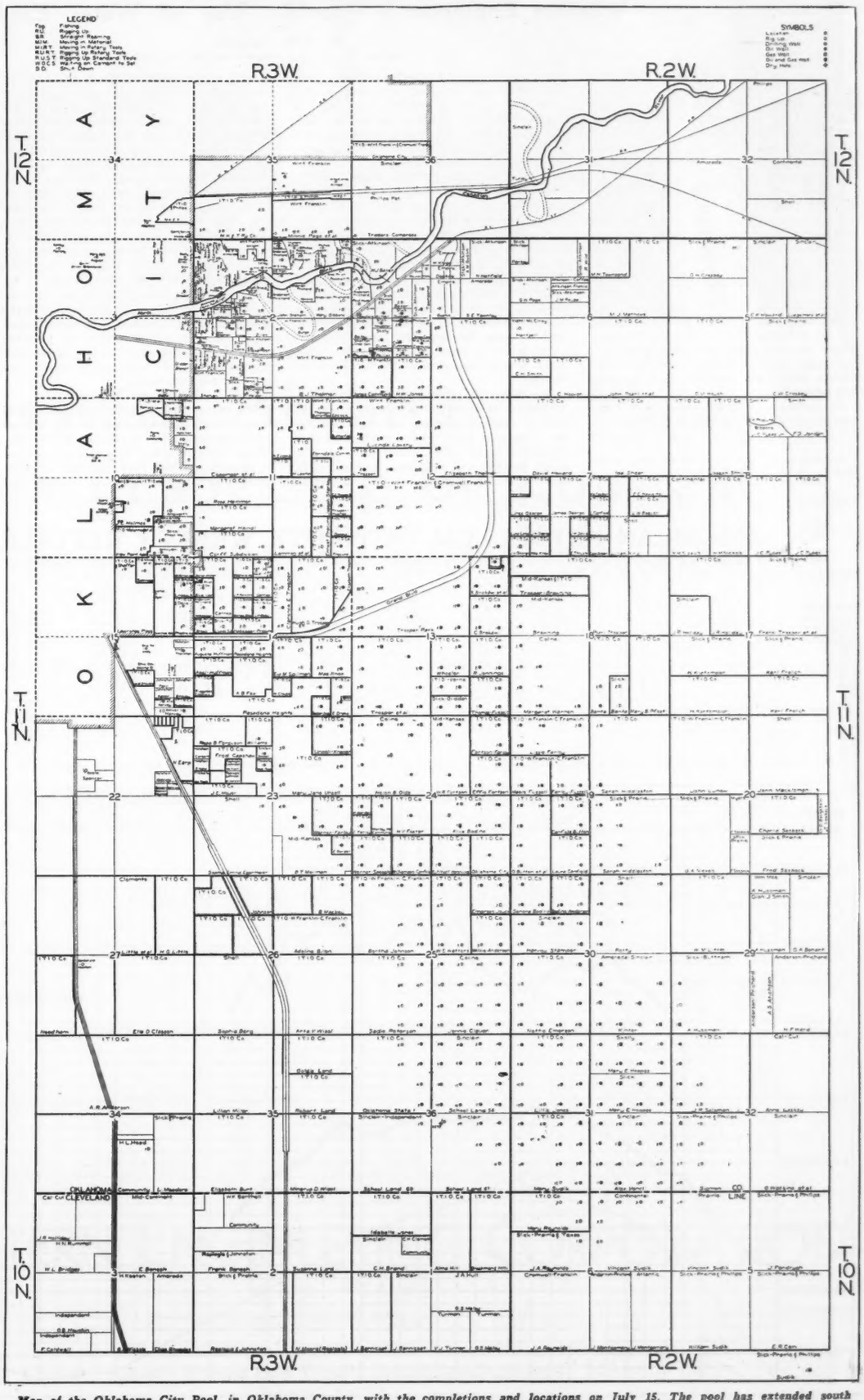
In addition to the material listed above as charged against the drilling operations the average lease is being equipped with a camp. A typical one is made up of a superintendent's house costing about $3,400; three cottages at a total cost of $9,500 and a warehouse and lease office costing $6,000 or a total investment in camp of $18,900.

Running water, electricity and gas is furnished in all of these buildings and most of the camps built or building in this area compare very favorably with similar structures in other fields.

To handle the oil on the lease some companies are setting from 4 to 8 1,000-bbl. bolted steel tanks. Others set from 4 to 16 low 500-bbl. tanks. One battery of four 12-gauge and four 10-gauge low 500-bbl. tanks cost approximately $7,000 installed, and this lease is already pro-

(Continued on Page 171)

MAP OF MOST ACTIVE AREA IN OKLAHOMA



Map of the Oklahoma City Pool, in Oklahoma County, with the completions and locations on July 15. The pool has extended south into Cleveland County.

Exploding Old Ideas Instead of Tanks

Percentage of Air Mixture With Gasoline Vapors Determines Whether Explosion Is Possible. Use of Water Explained

By M. B. Anfenger
Fire Prevention Engineer, Standard Oil Co. of California*

During the last few years there has been considerable study with accompanying experiment and research on the subject of oil fire protection. The study has shown that there are several false notions pretty generally held and that sometimes dangerous practices are carried on in the name of safety.

A few years ago, in Southern California, the roof of a large tank was blown off by an explosion and a bad oil fire resulted. Investigation showed that the equipment which was intended to prevent fires in the tank or to extinguish a fire which might occur was largely responsible for the fire. A study of conditions showed further that the equipment provided was neither capable of preventing nor of extinguishing a fire in the tank. There are still many similar installations and many others just as dangerous and useless which are based on old ideas of fire protection.

At present a large part of an oil fire protection engineer's time must be devoted to an attempt to correct erroneous ideas in the minds of civic officials, underwriters and even oil company executives and employes. This applies to the entire field of oil fire prevention and fire protection, but we will attempt to narrow this paper to a discussion of safeguards against tank explosion.

*Presented before Petroleum Section at Seventh Annual Pacific Safety Conference, San Francisco.

Old Customs Now Rules

Some of the old customs have been so generally accepted that they have developed into rules which have been taught for years and it is extremely difficult to change ideas about them. To intelligently apply fire prevention in the oil industry we must understand underlying principles and then analyze each specific case rather than attempt to apply any general rule. Let us, therefore, briefly review some fundamental principles regarding oil vapors because tank explosions are always due to the presence of vapor.

We know that gasoline vapor before it can burn or explode must be mixed with air in certain proportions and that it must have at least 94 per cent of air for any burning or exploding at all. On the other hand it will not burn if mixed with more than 99 per cent of air. In terms of the vapor content, there must be at least 1 per cent and not more than 6 per cent of gasoline vapor mixed with air for a combustible or explosive mixture. If we have about 3 per cent of gasoline vapor mixed with approximately 97 per cent of air we get a good, rapid burning, popularly termed an explosion, when the mixture is ignited. If, to this mixture more gasoline vapor is added, the mixture will not support flame when the vapor content exceeds 6 per cent. Strange as it may seem if, instead of adding gasoline vapor to the 3 per cent mixture, we add an inert vapor such as steam, we would have to bring the steam concentration up to about 40 per cent of the mixture before it would be rendered nonexplosive. In other words, if gasoline vapor is added instead of an inert gas, very much less is required to render the mixture nonexplosive.

Heavy Oil Vapors

We can now explain why gasoline and other volatile oil tanks are not as dangerous from the explosion standpoint as some of the heavier oils. The vapor pressure of lubricating oil, fuel oil and kerosene at ordinary temperatures is so low that the vapor space above the oil contains less than 1 per cent of vapor and consequently the vapor space will not ordinarily be explosive. In case the temperature of the oil is raised, however, as by a nearby fire, an explosion vapor air mixture can develop in time. In the case of lubricating oil the fire would have to be directly in contact with the tank.

The vapor space above engine distillate and some crude oils is apt to contain just enough vapor to produce an explosive mixture at ordinary temperatures while the vapor pressure of gasoline and other similar light oils is high enough so that the vapor space is usually too rich to explode. Of course, the gasoline tank may breathe in air when cooled or when the gasoline is being run out of the tank and thus we may at times find a pocket of explosive mixture in a gasoline or other volatile oil tank. Most of the time, however, we will expect to find a mixture too rich if the tank roof is gas tight and properly vented. We thus see that no matter what product is stored, an explosive mixture may be present in the tank under some conditions.

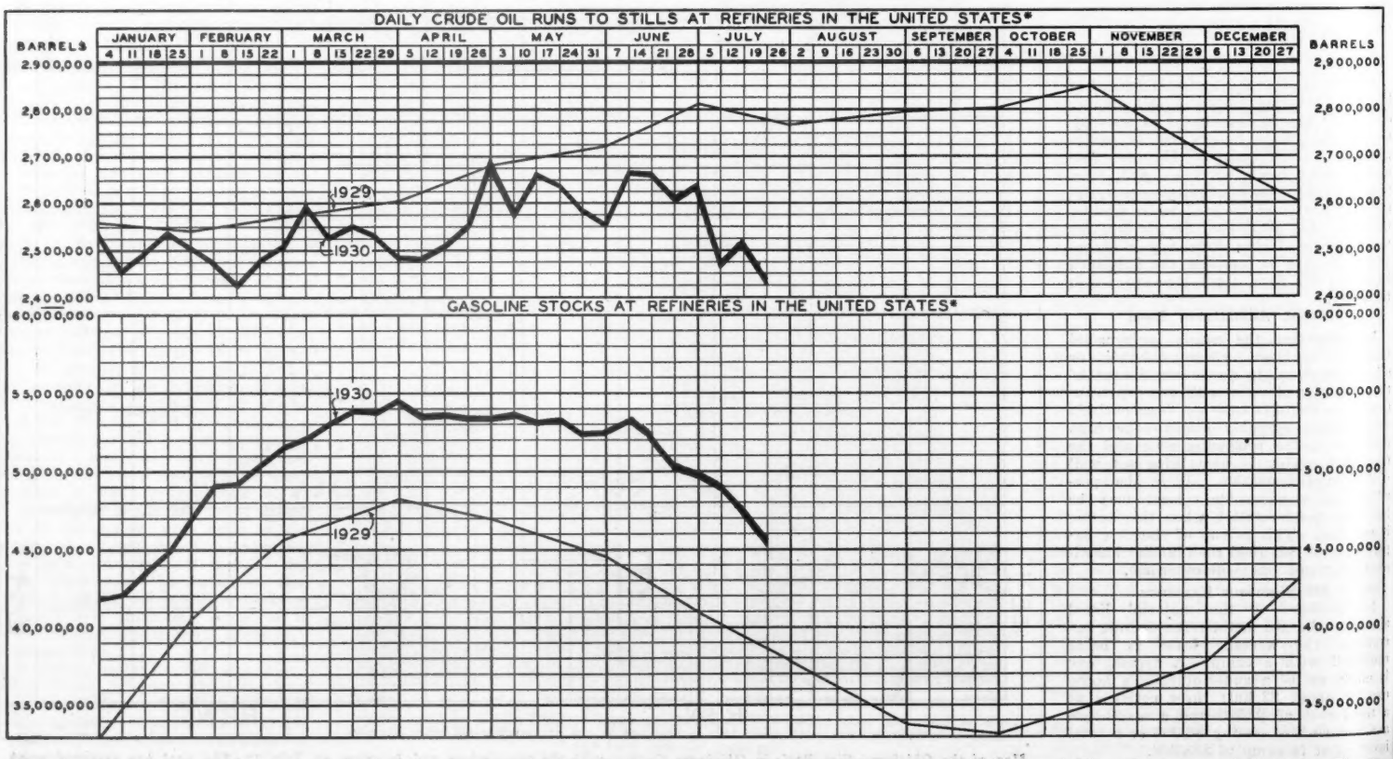
(Continued on Page 172)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

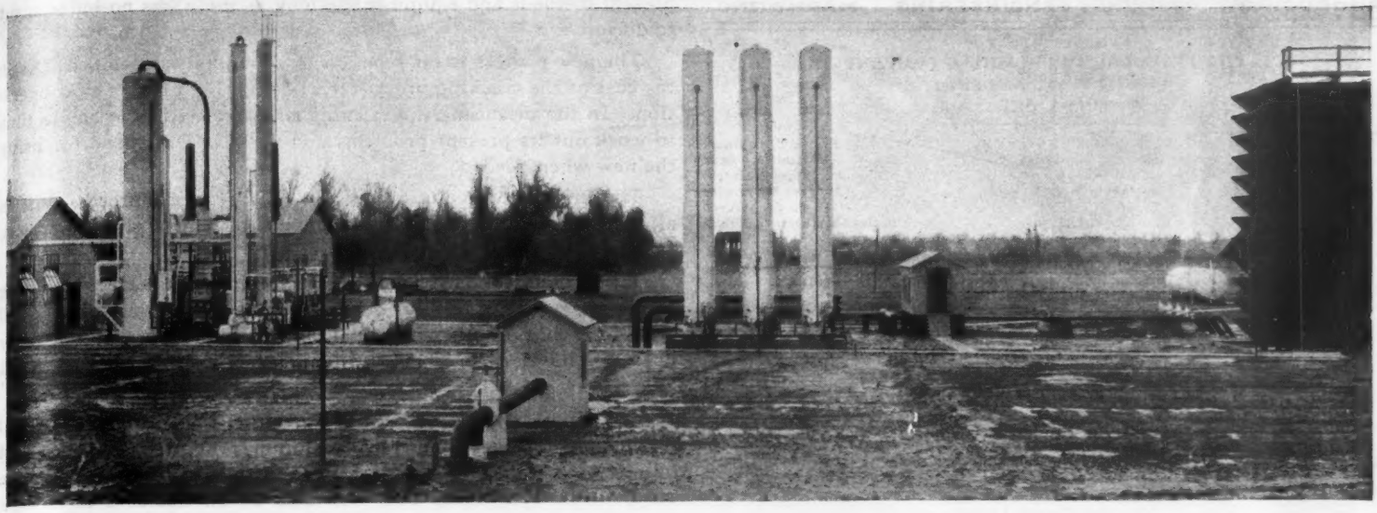
The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending July 26.

	Week ending July 26				Week ending July 19				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	488,700	7,354,000	9,757,000	100.0	490,400	7,601,000	9,542,000	100.0	454,857	5,998,000	7,431,000
Appalachian	91.8	77,800	1,467,000	1,042,000	91.8	86,400	1,572,000	950,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	99.6	295,900	7,363,000	4,403,000	99.6	309,300	7,587,000	4,242,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.8	281,600	3,837,000	4,671,000	89.9	268,600	4,069,000	4,722,000	87.7	263,428	3,604,000	3,277,000
Texas	90.4	582,600	6,476,000	10,182,000	90.4	541,700	6,747,000	10,338,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	96.8	164,900	1,977,000	1,927,000	96.8	171,400	2,082,000	1,880,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.6	54,800	2,481,000	1,204,000	93.6	59,500	2,580,000	1,197,000	93.3	41,614	2,273,000	973,000
California	99.3	572,300	13,796,000	106,083,000	99.3	518,700	13,759,000	106,242,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,518,600	44,751,000	139,269,000	95.7	2,446,000	45,937,000	139,113,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	429,900	5,253,000	7,155,000	100.0	392,900	5,582,000	7,290,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	106,100	1,589,000	1,068,000	100.0	114,900	1,709,000	1,064,000	100.0	108,514	1,877,000	3,818,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.



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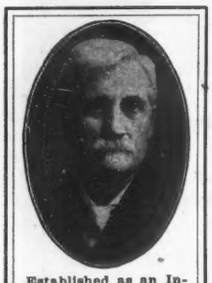

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NO FEAR IN HYDROGENATION

The actual formation of the Hydro Patents Company, including 80 per cent of the refining industry in this country, has brought the possibilities of hydrogenation down from the realms of speculative theory into the domain of stern practicality in the minds of many in the oil business who had heretofore regarded it as only a remote theory.

It has made hydrogenation one of the most anxiously discussed topics of the day, especially among those who fear that in some manner it may mean to them revolutionary and disastrous changes.

Nothing of the sort need be feared.

It is safe to predict that the new development, when perfected, will prove as valuable to the oil industry as the development of cracking which, it may be recalled, was viewed by many at the outset with much the same forebodings which have not been realized.

The evolution of cracking has been all that enabled the oil industry to meet the growing demands made upon it by the enormous expansion of the motor industry. The day is likely to come when the development of hydrogenation will be recognized as of similar value in enabling the industry to supply the greater demands of the future.

The traditional reaction towards any startling new development in the oil industry, particularly when sponsored by the leading interests, has been a fear among the lesser units that it would be found a step towards monopoly.

That, too, has been dispelled by the action of the original owners of the process in this country which has shown that they do not intend to misuse it for any personal or selfish advantage but have turned it over to the entire industry for the general benefit.

The participation of the 80 per cent of the refining industry already associated in the development assures that the process will be used constructively for the best interest of the industry as a whole.

But, aside from that, the economic phases of the situation are an abundant assurance that the new development will bring no sudden and upsetting changes into the industry.

The manufacturing branch of the industry has become so superefficient technically that it has been producing a flood of gasoline at too low price levels which no new process could hope to compete with under existing conditions.

From all that has been learned about the hydrogenation process it is not conceivable that it would enter into such competition with present methods and equipment so long as there was no inducement to do so.

The new process is far from being completely developed. As in the case of the cracking process it will probably prove a slow operation. In the meantime the refining industry will have ample time to work out its present problems and put itself in shape for using the new when needed.

The immediate evolution of the hydrogenation process will in all probability be toward the development of high grade products, such as lubricants, antiknock motor fuels, etc.

The official announcement indeed refers to "its effect of lifting the average quality level of gasoline, kerosene, lubricating oil, fuel oil, Diesel oil and other principal petroleum products in which the policy of the new company will be dictated by the interests of the industry in general."

The direct bearing of the new process in the conservation of oil is, of course, at once apparent, yielding from 100 to 150 per cent gasoline to the barrel of crude. Its effect in removing fuel oil from competition with cheap coal will also be an immense advantage. The absolute ability to regulate output of products in line with demand will be a distinct gain.

On the question of cost the statement of A. C. Fieldner, of the United States Bureau of Mines, is of interest.

"Obviously," Mr. Fieldner says, "the enormous amount of added expense arising from this process would make immediate commercial application of the process impractical. However, we may go from a feast to a famine in a few years and possibly back to a feast again showing the value of the process lies in its possible use in case of necessity."

He expresses doubt that it will ever make gasoline cheaper in view of the present low price levels under the existing methods of production. But, as in the case with cracking and the development of natural gasoline manufacture, its greater yield will prevent prices that would restrict consumption.

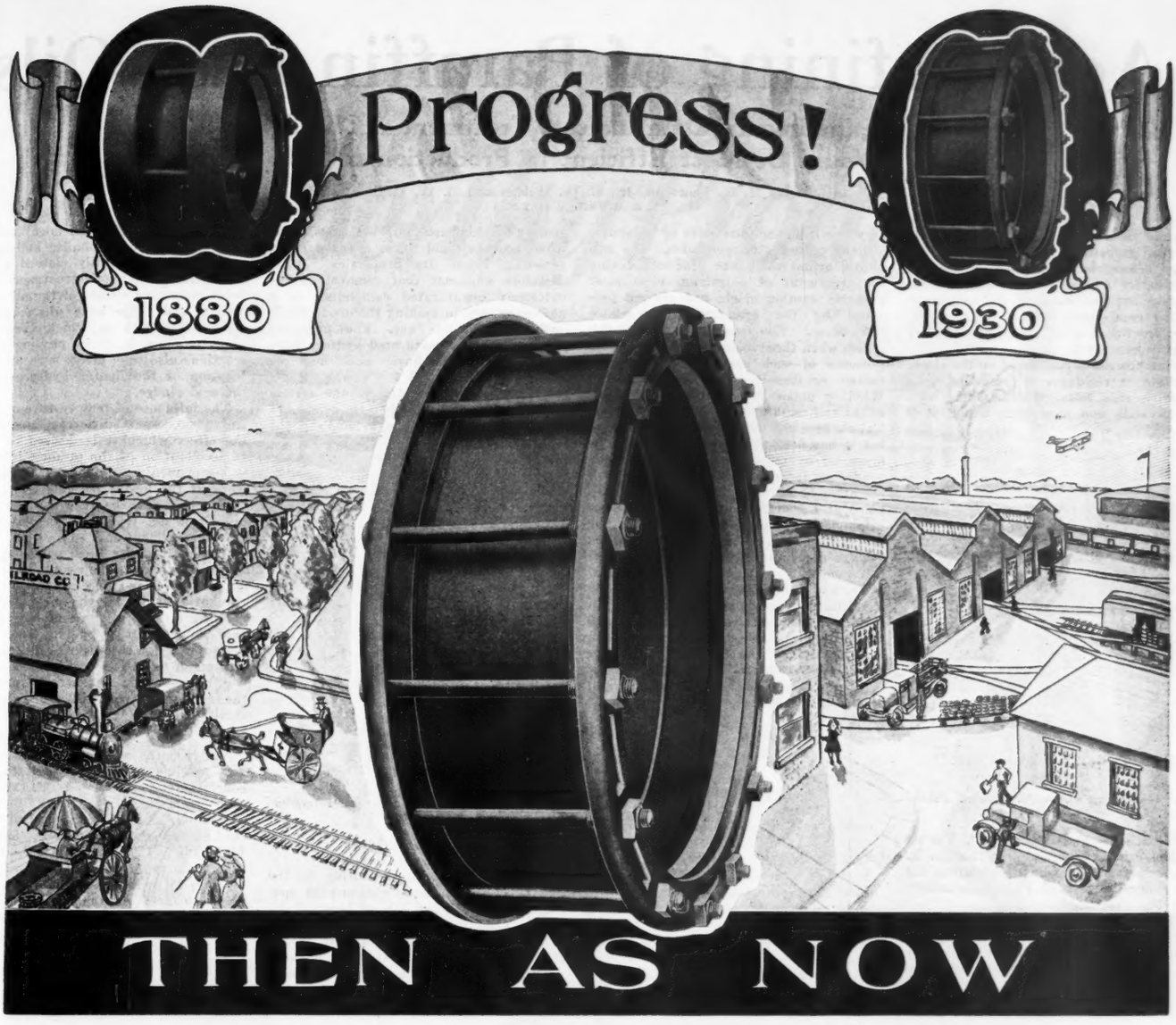
No upsetting changes in the markets need therefore be feared from the new development. First, it will, undoubtedly, require several years to perfect the process, during which there will be no serious competition with existing methods. Second, there will be no incentive to resort to the innovation so long as present price levels remain. The new process will not be used until the price justifies the additional expense.

If and when it is eventually put into general use it will be found that the greater operating control of all products through this process will stabilize the markets for these products on a representative basis instead of throwing the burden upon one or two products. Fuel oil, for instance, will not be sacrificed at coal prices. The higher quality products obtainable by the new process will put them in the classification of premium goods.

In addition to these advantages there will be the removal or indefinite postponement of the fear of exhaustion of our petroleum resources which has to a certain extent deterred investment in oil enterprises by many who have been led to believe petroleum was a hazardous speculation over a period of years.

Meantime refiners who often justly complain of the prices received for gasoline, their principal product, can reflect that these low prices have at least made the road of the substitute exceedingly rough and have indefinitely postponed the day when new manufacturing methods and new products will take the place of the old.

To summarize we are assured in the first place that the development of the hydrogenation process will be along orderly lines with adequate protection to present investments. Secondly, we have the security of constantly decreasing manufacturing costs with present methods. Finally hydrogenation is another discovery which adds greatly to our potential petroleum reserves, and, taken with other developments in the discovery and production of crude oil, removes the spectre of famine placing the entire industry on the soundest basis in its history.



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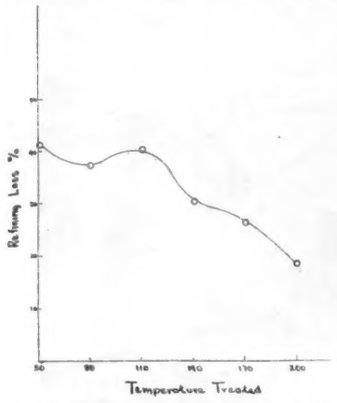
Acid Refining of Paraffin Base Oils

Experimental Data Indicate Treatment at 170° F. Would Be Most Efficient in Production of Oils

By M. K. Thornton, Jr., E. W. Wilson and H. W. Hillis
A. & M. College of Texas

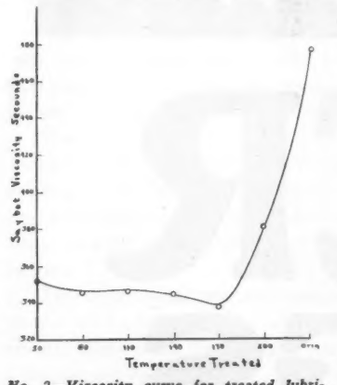
Crude petroleum and its distillates contain impurities which must be removed before the oil is used. These impurities are asphaltic and resinous substances, oxygen, sulphur and nitrogen-bearing compounds, which are removed, after fractional distillation, by treating with concentrated sulphuric acid. The treating process is performed on the crude distillate or residuum by agitating with sulphuric acid, followed by washing with caustic soda and then with water until



No. 1—Refining curve for treated lubricating oil.

free from soaps and excess alkali. The oil is then dried by passing air through it. The temperature at which lubricating oils are generally treated is approximately 125° F.

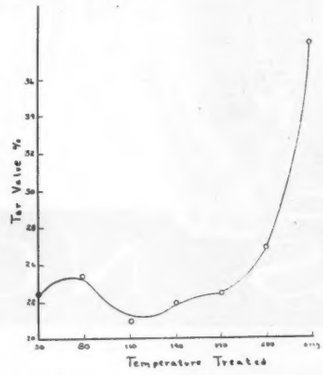
The following experiments were carried out for the purpose of studying the changes produced in a lubricating oil by treatment at different temperatures, also



No. 2—Viscosity curve for treated lubricating oil.

to determine the advantages and disadvantages of such changes. All of the experiments were carried out on the same oil, which was a dewaxed 480 seconds viscosity paraffin base lubricating stock. This particular oil is known as a red oil stock. All the samples were treated with 66° Be. sulphuric acid.

Aromatic hydrocarbons are attacked very slowly in the pure state by sulphuric acid at ordinary temperatures. The sulphuric acids which are produced during the treatment of petroleum have most probably another origin and are not produced by the aromatic hydrocarbons themselves.[1] The case is, however, different when these hydrocarbons are in the presence of such substances as are attacked or dissolved by sulphuric acid. Whether under these circumstances paraffins and naphthenes also undergo chemical changes has not yet been investigated, but it has been proved that they may be dissolved by sulphuric acid under these conditions in considerable quantities.[1] On the other hand, when the treatment takes place at higher temperatures a series of sulphonation reactions do take place. The acid sludge from such treatment contains a large percentage of aromatic hydrocarbon compounds, mostly in the form of acids, and a considerable amount of the aromatic hydrocarbons themselves.[1-3] In this case the acid sludge seems to have either dissolved or selectively adsorbed a large fraction of the aromatic compounds out of the petroleum. At this higher temperature a large number of sulphonic and disulphonic acids are formed, which all



No. 3—Tar value curve for treated lubricating oil.

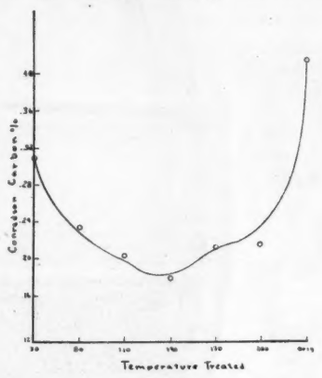
have an important effect upon the final properties of the refined oil.

The action of sulphuric acid on the resinous and asphaltic substances of petroleum has been explained in two ways. According to one view—by far the most widely accepted—the reaction is of the nature of polymerization; according to the other this is not an ordinary chemical reaction but a physico-chemical process of the flocculation of colloidally dissolved substances and their adsorption by the acid.[2] It is more than probable that both theories are correct and apply simultaneously.

Importance of Unsaturates

The most important classes of compounds which are affected by the refining process are the unsaturates. A lubricating oil which contained any appreciable amount of unsaturated hydrocarbons would, on standing, undergo a number of internal changes caused by polymerization and condensation reactions, and when heated would be so changed as to seriously injure its properties. It is therefore apparent that removal of the extremely unsaturated compounds is a necessary step in making the crude lubricating oil fit for use. The principal changes[3] which unsaturated hydrocarbons undergo with sulphuric acid may be classed as:

(a) Changes resulting in the formation of acid esters of sulphuric acid or of neutral esters of sulphuric acid by the



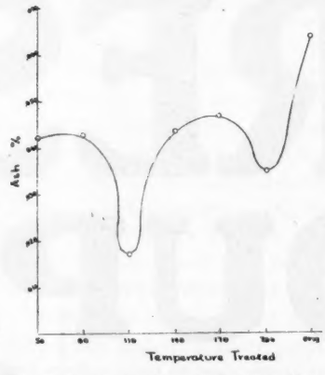
No. 4—Conradson carbon curve for treated lubricating oil.

addition of sulphuric acid to a double bond of the unsaturated molecule;

(b) Polymerization, resulting in the uniting of two or more unsaturated molecules to form heavy oils or tars;

(c) Oxidation to alcohols, acids, or to larger molecules, as evidenced by the evolution of sulphur dioxide. It is those unsaturated compounds which are most easily oxidized by sulphuric acid that produce the undesirable effect when the oil is in use.

So far as the polymerizing action of sulphuric acid on unsaturated hydrocarbons is concerned, the specific gravity and viscosity of petroleum distillates should be decreased by their removal.[3]



No. 5—Per cent ash curve for treated lubricating oil.

The nature of the chemical action of sulphuric acid on asphaltic and resinous substances is generally classed as polymerization. After acid treatment the average molecular weight of the oil is often higher, and there have often been secondary reactions in which the oil has taken up sulphur. Some physico-chemical reactions also take place, such as the adsorption of the lighter hydrocarbons by the acid sludge.

The influence of temperature on the refining process is different according to the effect which it is desired to attain. If decoloration of the product is desired, it is commonly accepted as advisable to work at the lowest possible temperature. While this may be true for the lighter oils, it is not true with the oil used in these experiments.

The quality of refined petroleum products may suffer as the results of too short as well as of too long a treatment with sulphuric acid. In the first place the refining is naturally incomplete, and the acid sludge settles badly. Too long a period of action is detrimental because the amount of oxidation is increased, and the colored asphaltic substances formed by the sulphuric acid will redissolve to a small extent.

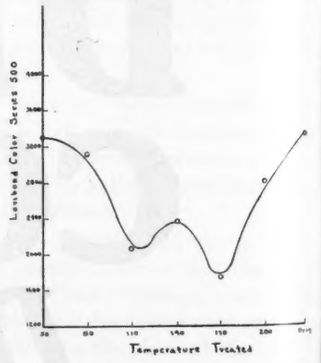
Procedure

Water baths were so arranged that it was possible to keep the agitators at a constant temperature ±1° F. throughout each treatment.

One-liter samples were used at each of the following temperatures: 50°, 80°, 110°, 140°, 170° and 200° F. In each case the amount of acid used was equivalent to 18 pounds per barrel of oil. The sulphuric acid was added to the sample of oil and the mixture agitated with air until a heavy "pepper" formed; this was then "broken out" with water. The acid sludge was then removed. The oil was neutralized with caustic soda and washed with water until free from soaps.

The first five samples were easily washed free from soaps, but the sample treated at 200° F. required considerable time and patience to wash completely. After the completion of the treatment the oils were filtered through filter paper and the following determinations were

(Continued on Page 212)



No. 6—Color curve for treated lubricating oil.

DATA ON ACID REFINING OF PARAFFIN BASE OILS

Temp. treated °F.	Refining loss %	A.P.I. gravity corrected (60°F.)	Flash-point °F.	Viscosity 100°F.	Surface tension (80°F.)	Lovibond color 500 series	Pour test °F.	Index of Refraction	Static coef. of friction (olive oil .14$)	Tars and olefines	Emulsification	Interfacial tension 82°F. dynes	Conradson carbon	Per cent ash
50	41	23.3	420	352.2	53.5	3,312	25	1.4915	.2147	22.5	*	48 89	.308	.0424
80	37	23.4	415	345.75	53.5	3,112	25	1.4922	.2114	23.5	*	42.24	.2316	.0429
110	40	23.4	420	346.3	53.7	2,085	25	1.4945	.2309	21.0	*	31 04	.202	.0169
140	30	23.2	415	346.0	53.5	2,368	25	1.4949	.2183	22.0	*	32.79	.1759	.0439
170	26	23.5	420	336.8	53.2	1,733	30	1.4950	.2665	23.5	*	35.94	.213	.0469
200	18	23.2	425	381.5	53.5	2,793	30	1.4920	.2407	25.0	*	32.85	.214	.0340
Orig.	..	21.5	430	477.3	53.5	3,328	20	1.4839	.1858	36.0	*	61.74	.414	.064

*Emulsion completely broken in two minutes.

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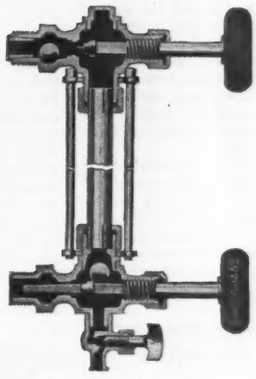


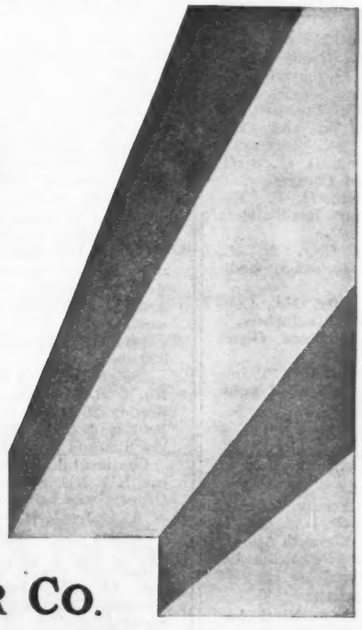
Safeguard Automatic Liquid Level Gauge

~for many years the standard of the Oil Industry

Screw Plunger Grease Cup

Penberthy Products are carried in stock by leading supply houses everywhere

Spring Compression Grease Cup



PENBERTHY PRODUCTS

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Bradford-Allegany Operators Reduce Their Crude Output

BRADFORD, Pa., July 25.—A reduction of 12,931 bbls. per day in the production of the Bradford Field was accomplished in the first 20 days of July according to A. E. Booth, president of the Northwestern Pennsylvania Oil Producers Association at a meeting of 200 oil men here last night. As the average potential production of the field is about 30,000 bbls. a day, Mr. Booth's figures represent a curtailment of 43 per cent of potential. Mr. Booth said that 118 Bradford producers had signed the agreement to cut down their production 50 per cent and he expressed the opinion that these operators were close to their 50 per cent reduction. Operators in the Allegany Field have all signed the 50 per cent curtailment agreement which like the Bradford agreement covers a five-year period, if necessary.

The Tide Water Oil Co., through Noel Robinson, its vice president in charge of production, applied for admission to the Northwestern Pennsylvania Oil Producers Association. Mr. Robinson said the Tide Water stands ready to manufacture and market a lubricating oil made from 100 per cent Pennsylvania crude, which the company desires shall be produced in the Bradford and the Allegany Fields. It will be sold from coast to coast at the company's stations, he said, and widely advertised, and already the company has fitted tankers to ship the product to the Pacific Coast. At the conclusion of Mr. Robinson's address his company was unanimously taken into the association.

The Tide Water refineries in Bayonne, N. J., used an average of 8,280 bbls. of Pennsylvania Grade crude in the first six months of 1930. In 1924 it used 2,600 bbls. a day; in 1925, 3,370 bbls. per day, according to Mr. Robinson.

OIL MAN'S CALENDAR

AUGUST

4-9—New York, International Exposition of American Import Trade. Grand Central Palace.

26-28—Chicago, National Air Races.

SEPTEMBER

2-4—Toronto, Ontario, North American Gas Tax Conference, King Edward Hotel.

8-12—Cincinnati, Ohio, Eightieth Meeting, American Chemical Society, Hotel Gibson.

17—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

17-19—Atlantic City, N. J., National Petroleum Association, Hotel Traymore.

29-Oct. 4—Pittsburgh, Pa., Petroleum Section, National Safety Council.

OCTOBER

3—Tulsa, Okla., Board of Directors, American Petroleum Institute, Mayo Hotel.

4-11—Tulsa, Okla., International Petroleum Exposition and Congress.

6-11—Washington, D. C., Sixth International Road Congress.

6-11—Washington, D. C., Exhibition, American Roadbuilders Association.

13-17—Atlantic City, N. J., American Gas Association, Auditorium.

14-16—Kansas City, Mo., Convention, Big Four State Jobbers.

16-25—London, England, Olympia Motor Show.

22-24—Pittsburgh, Pa., Transportation Meeting, Society of Automotive Engineers.

NOVEMBER

2-5—St. Louis, Marketing Congress, Independent Oil Men of America, Statler Hotel.

6-11—Berlin, Germany, International Automobile Show.

10-13—Chicago, Eleventh Annual Meeting, American Petroleum Institute, Stevens Hotel.

DECEMBER

1-5—Memphis, Tenn., Ninth Annual Asphalt Paving Conference, the Asphalt Institute and Association of Asphalt Paving Technologists.

JANUARY

3-10—New York, National Automobile Show.

24-31—Chicago, National Automobile Show.

Late Fields

ARKANSAS

SHREVEPORT, La., July 29.—Lenz and others' No. 1 Johnson, in Section 24-15-26, Miller County, Arkansas, a rank wildcat, is a producer but just how good remains to be seen. While waiting for a swab during the week-end, fluid, practically all oil, started slopping over connections. Swabbed to 50 feet off bottom in 13 hours and shut down over night, fluid again rose to within 250 feet of the surface and the well will remain shut down for a couple of days to see what will happen. The oil tested 29.5 gravity, and there appears to be no gas whatever. Total depth is 2,847 feet with 4 feet of sand in a red bed formation.

OKLAHOMA

The Oklahoma City Pool was reopened July 28 on its regular proration basis. The proration plan allows 8⅛ per cent of the potential. The class "D" wells were opened July 28, and all the producing wells in the field will be allowed to flow in their regular turn. The overdue wells are believed to have completed their 24-hour initial gauges since the field was shut down July 12. For the last two weeks the production has been coming from the wells that were behind in recovery.

Wells in all the classes, A, B, C, D, E, F, G and H will each flow one day out of every 12 days. Special dispensations have been made for wells on the gas lift. The pipe line and purchasing companies with connections in the field have agreed to take a minimum of 85,000 bbls. a day from the pool. The production from the Oklahoma City Pool, on the gauge of July 29, was 99,751 bbls. from 35 wells, with a total of 378 completed.

Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 1 Messer, SW cor., Section 32-14-3w, a wildcat test about 14 miles north of the Oklahoma City Pool, in Oklahoma County, was preparing to core at 6,337-44 feet in sandy shale with a small show of oil.

East of the Oklahoma City Field in the Nicoma Park area Mid-Kansas Oil & Gas Co.'s No. 1 Cornwell, SE cor. SW, Section 18-12-1w, an offset to the discovery well, was drilling in Simpson sand at 6,825 feet. The top of the Simpson sand was found at 6,710 feet. The production in the discovery well was found at 6,350 feet.

Indian Territory Illuminating Oil Co.'s No. 5 S. Peterson, NW cor. NE SW, Section 25-11-3w, in the Oklahoma City Pool, made 3,755 bbls. in 21½ hours from the Simpson sand at 6,370-6,606 feet.

Continental Oil Co.'s No. 2 Sudik, NE cor. NW NE, Section 6-10-2w, Cleveland County, was bailed dry at a total depth of 6,744 feet. It will be drilled deeper. The test is surrounded by producing wells.

Pure Oil Co.'s No. 1 Chapman, SW cor. SE SW, Section 14-6-3, Pottawatomie County, in the Wanette Pool, made 1,140 bbls. of oil and 40 bbls. of water in 13 hours. The total depth of the well was 3,635 feet in sand.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Morgan, C NW NE, Section 33-16-1w, a wildcat in Logan County, had the Bartlesville sand at 5,275-5,323 feet, where oil rose 2,500 feet in the hole. It was being drilled deeper at 5,332 feet in shale.

Pure Oil Co. and others' No. 1, SE cor. NE. Section 22-7-5, Seminole County, a wildcat east of the St. Louis Pool, had 1,500 feet of oil in the hole from the Simpson sand at 4,152-90 feet. It may open another pool east of the old St. Louis area.

KANSAS

Shell Petroleum Corp. and Tatlock and others' No. 1 Ploog, C SW SE, Section 33-18-9w, Rice County, wildcat, swabbed 253 bbls. on the gauge of July 28, from the sand at 3,249-50 feet in 21 hours. The hole was swabbed down.

McPherson Oil & Gas Co. and Shell Petroleum Corp.'s No. 1 Jennings, NE cor. SW NW, Section 21-18-6w, Rice County, wildcat, had a hole full of water in the Wilcox sand at 3,475-97 feet, and may be abandoned.

E. L. Study and others' No. 1 Haury, NE cor. SW, Section 1-23-4w, Reno County, a wildcat test, was drilling at 2,550 feet, with nothing showing.

McKnabb and Missouri Pipe Line Co.'s No. 1 Gregory, C NW, Section 19-33-38w, Stevens County, has been completed and is estimated at 12,000,000 feet of gas at a total depth of 2,800 feet. The gas well is on a 3,000-acre block.

Empire Oil & Refining Co.'s No. 2 Ochs, SE cor. NE, Section 23-15-14w, Russell County, the third well to be completed in the Ochs Pool, in the southern part of the county, had the Silicious lime 3,351-70 feet, where it made 30 bbls. and swabbed dry. It may be drilled deeper. It is two locations south of the discovery well.

Vickers Petroleum Co. has begun work on its 4-inch pipe line to connect its new property in the Eastborough Pool, in Sedgwick County, with the refinery at Potwin, in Butler County, a distance of about 25 miles. Right of way has been secured and pipe for the new line has been arriving on the location. The line will extend a half mile east of the company's new well in Section 30-27-2, and then north 10 miles where it will be connected to the Empire Oil & Refining Co.'s 12-inch line, which runs between the Valley Center Pool and Eldorado. The Empire company's line runs to the refinery at Potwin. The Vickers Petroleum Co. has been shipping oil from the Valley Center Pool to its refinery for some time through the Empire company's line and will handle the oil from the Eastborough Pool in the same manner.

High Spots in Field News

ROCKY MOUNTAIN AREA
Sixteen new locations made in Hobbs Pool.

SOUTHWEST TEXAS
Injunction ends proration in Darst Creek Field.

EAST CENTRAL TEXAS
Scarcity of water creates drilling problem in Van Pool.

KENTUCKY
Further shutdown contemplated in western Kentucky fields.

CALIFORNIA
New wells brought in on second anniversary of Elwood Field.

MICHIGAN
Three dry gassers in Marshall sand turn attention to Michigan.

KANSAS
State's production held down to approximately 116,800 bbls. daily.

GULF COAST
Series of good wells north of original field arouses new interest in Vinton area.

NORTH TEXAS AND PANHANDLE
Panhandle district registers drop in production, with Wichita Falls showing slight gain.

NORTH LOUISIANA-ARKANSAS
Two big shallow producers completed in Zwolle area, with drilling campaigns likely to follow.

OKLAHOMA
Effect of proration shown in decline of 20,000 bbls. in daily production, making daily average 565,000 bbls.

CHANGES IN SUNRAY

At the recent annual meeting of the Sunray Oil Corp., Clarence H. Wright, of Tulsa, vice president of the organization's operating subsidiary, the Sunray Oil Co., was elected president to succeed Crosby Giage, of New York, who was made chairman of the board. R. S. McFarland, of Tulsa, also vice president of the Sunray company, was made a vice president of the parent company and a member of the board of directors.

MAGNETIC STORM

Tucson observatory of the United States Coast & Geodetic Survey report magnetic storm as follows:

"Storm began twenty fourth, twenty one. Severe." "Storm ended twenty-sixth, twenty."

SCORE CARD ON OIL PRODUCTION

Below is shown allotted average daily production in the United States, April to December, inclusive, suggested by the Committee on Economics of the Federal Oil Conservation Board, and the actual daily average production during the week ending July 26:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
California	610,000	606,100	.....	3,900
Oklahoma	655,000	565,140	.....	89,860
Texas	750,000	832,339	82,339	.....
Other fields	480,000	474,270	.....	5,730
Total	2,495,000	2,477,849	82,339	99,490

Net underproduction 17,151 bbls. per day.

	Bbls.
Allotted production April 1 to July 26	291,915,000
Actual production April 1 to July 26	300,922,281
Total overproduction 117 days	9,007,281
Average daily overproduction 117 days	76,985

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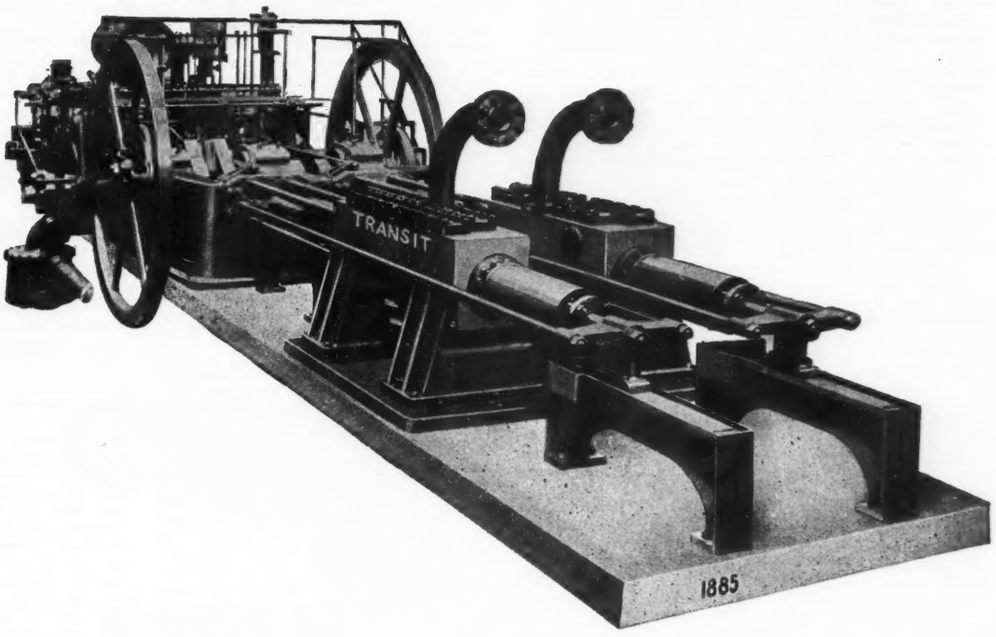

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At relatively high speeds, the fluid cylinders fill perfectly, thereby insuring quiet running with absolutely no jar on the pipe joints.

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Proration Effective in Oklahoma

Production Averages Only 565,000 Bbls. per Day. Big Wells Continue to Come in in Oklahoma City Pool

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's oil production registered a decline, approximately 20,000 bbls. a day for the week ending July 26. It is the third consecutive week oil production has shown a sizeable decline. The total daily average production was 565,000 bbls. for the same seven days.

A number of wildcat tests in Oklahoma County have found showings of oil, leading to the belief that other pools than the Oklahoma City Field may be found in the county before the efforts of wildcatters are concluded. The latest to find oil and gas showings is the Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 1 Messer, SW cor., Section 32-14-3w, Oklahoma County, 3 miles west of Edmond. After the showing of oil and gas was noticed the crew attempted to take a core of the formation but was unsuccessful and the second attempt is being made. The oil and gas was believed to be in sand which was found at 6,321-26 feet. It is the first oil found in the test, and the sand is above the Hunton lime. The well is located about 2½ miles northwest of the Prairie Oil & Gas Co.'s No. 1 Dills, in Section 17-13-3w, which had a showing of oil and gas at 6,607 feet several weeks ago and was still drilling deeper. Some geologists believe the Mid-Kansas company's test is running higher on structure than Prairie's test and the present showing may indicate it may find production in deeper sands.

A strong pressure of gas caused the drill pipe to blow out and damage the drilling equipment at the Tom Slick Oil Co. and others' No. 2 Dannreuther, SE cor. NW, Section 2-11-3w, in the north end of the Oklahoma City Pool. The cement had just been drilled out at a total depth of 6,281 feet and almost all of the drill pipe had been removed when the blowout occurred. The last few joints were blown out wrecking the top of the derrick. The gas was estimated at 150,000,000 feet. The master gates were closed after the well blew out for about 15 minutes.

Tatums Pool Is Active

The Tatums Pool, in Carter County, is one of the active areas in the southern part of the State. The extension well recently completed has caused the staking of new locations in that area. Operations in the new southeast extension to the pool were added to by the completion of the C. L. Anderson's No. 2 Eaves, C NW SW, Section 24-1s-3w, Carter County, which is estimated to be a 150-bbl. producer. Production is coming from a series of sands at 2,335-2,640 feet. Trevelyn Oil Co.'s No. 1 Mitchell, SW cor. NW SE, Section 24-1s-3w, which extended to production a half mile in the Tatums Pool, is flowing around 1,450 bbls. of oil a day.

In Southeastern Cleveland County

Oil was found in a wildcat test in southeastern Cleveland County. More than a bailer of oil was taken from the Dixie Oil Co. and others' No. 1 Higbee, C SW NE, Section 20-6-1. The test had been shut down and was recently opened for a bailing test. The total depth is 6,518 feet in Viola lime. The top of the Viola was found at 6,290 feet. Following the reopening of the test it was believed the gas pressure had increased. The 6-inch casing is landed at 6,320 feet. It was bailed down to 4,500 feet, and the hole was found to contain oil, water and gas. It was believed the oil show was found at 6,368-73 feet. The test will be drilled to the Wilcox sand which is expected at about 7,300 feet.

Western Payne County

Prairie Oil & Gas Co. and others' No. 1 Rule, C NW NE, Section 8-19-1w, in western Payne County, which was drilled into the pay horizon last week has been pinched to 350 bbls. a day. The production was found in the Misener sand at 4,862-64 feet. It was the second well completed in the area and made 1,574 bbls. the first 24 hours. Minnehoma Oil Co.'s No. 1 Shadal, NE cor. SE NE, Section 7-19-1w, had water at 4,949-54 feet and was drilling ahead at 4,975 feet to the Wilcox sand.

Deep Oil Showing in Woods County

Sinclair Oil & Gas Co.'s No. 1 Stewart, C SW SW, Section 33-27-16w, in Woods County, in the northwestern part of the State, had a sand at 7,141-45 feet, and it is believed to be Wilcox. A showing of oil was found in a core at 7,134-36 feet, in sandy lime. This well is the first of a number of wildcat tests that have been drilling for more than a year in the northwestern part of the State, to find the Wilcox sand.

Fixing New Potentials

The decline curve is to be used in determining the potentials for the Allen (shallow), Bowlegs, Carr City, Old Earlsboro, Little River, Maud, Mission, Searight, Seminole, East Seminole and St. Louis Pools, according to Ray M. Collins, state umpire. The decline for the month of July is estimated at 3 per cent therefore all leases in the above pools shall deduct 3 per cent from the July potentials and the difference shall constitute the potentials for the month of August. The allowed production will be 50 per cent of the new potential. Allen (Wilcox), Sasakwa, Earlsboro Townsite, and East Little River Pools, will be open to full production August 1 and 2, and the average for the two days will be the potentials for the month. Actual production will be 50 per cent of the potential.

In the East Earlsboro Pool the "A" wells will be opened August 1 and the "B" wells August 2. The production will constitute the potentials for the month of August. The allowed production will be 15,000 bbls. a day for the pool.

South Earlsboro Pool will be open August 3 and 4 to get its potential. The allowed production for August will be 25 per cent of potential.

Konawa Pool will be open to full production on August 3, 4, 5 and 6. The allowed production for August will be 18¾ per cent of potential.

Oklahoma City Pool

Sinclair Oil & Gas Co.'s No. 15 Vencl, SW cor. SE SE Section 31-11-2w, in the south end of the Oklahoma City Pool, was shut in after it made what is estimated to be 125,000,000 feet of dry gas. The hole, 6,572 feet deep, was bailed down only 900 feet, indicating a large rock pressure. Indian Territory Illuminating Oil Co.'s No. 14 L. Jones, SE cor. SW NW Section 31-11-2w, was also completed for 125,000,000 feet of gas. It was immediately shut in to prevent cutting the connections.

Same company completed No. 1 Spillman, SE cor. NW SE Section 14-11-3w, from a total depth of 6,526 feet in Simpson sand. The first hour's gauge was 498 bbls. and it made 4,938 bbls. the first 13 hours and 55 minutes before being shut in. The gas was estimated at 10,000,000 feet. It was bailed down 2,300 feet before starting to flow.

Same company's No. 1 Holmes-Gray, NE cor. SE NW Section 14-11-3w, made 275 bbls. the first hour. It was completed by the "washing in" method. It made 4,173 bbls. in 18 hours and 20 minutes. Same company completed No. 11 N. Emerson, SW cor. NW SW Section 30-11-2w, after bailing to more than 4,800 feet. It was estimated to have 2,000,000 feet of gas. It made 699 bbls. in 14 hours and 30 minutes. Same company's No. 6 N. Emerson, SW cor. SE SW Section 30-11-2w, an old well, was reconditioned and made 113 bbls. in eight hours swabbing.

Indian Territory Illuminating Oil Co.'s No. 4 L. Jones, SE cor. SW NW Section 31-11-2w, an old producer, was shot with 40 quarts on bottom at a total depth of 6,607 feet and flowed 353 bbls. the first 20 hours after the shot. It is one of the few wells in Oklahoma City that has been shot. The well had been dead for several weeks before it was shot.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Dills, SE cor. NW Section 17-13-3w, north of the Oklahoma City Pool, was drilling in lime at 6,755 feet. It had a showing of oil and gas at 6,607 feet and later water was found. Little change has taken place in the test during the last 100 feet.

Coline Oil Co.'s No. 11 Clauer, SW cor. NW SE Section 25-11-3w, which was completed as a gas well a few weeks ago and shut in, was opened again for 20 minutes and was estimated to be making 125,000,000 feet of gas and 59 bbls. of high grade oil. The well was shut in when the sand started cutting the connections from the high pressure of the gas.

23 Wells on City-Owned Land

Cromwell-Franklin Oil Co.'s No. 20 Trosper Park, NE cor. NW SW, Section 12-11-3w, was completed making it the twenty-third well completed on the city-owned property. It made 835 bbls. the first hour and 8,726 bbls. the first 12 hours. The gas was estimated at 30,000,000 feet. The total depth of well was 6,469 feet.

The Continental Oil Co.'s No. 2 Sudik, NE cor. NW NE, Section 6-10-2w, Cleveland County, in the south end of the Oklahoma City Pool, is still fishing for a bailer at a total depth of 6,644 feet. The well is surrounded by three other producing wells.

Problem of Salt Water

Several Silicious lime wells of declining production were put on the air lift some time ago. These wells are now making an average of 18 bbls. of water to every barrel of oil produced. The problem confronting Oklahoma City operators is to find an outlet for the water. The oil companies all joined together some time ago and built a 24-inch pipe line from the field to the river to handle the excess water from the wells. The capacity of the pipe line is now being taxed to the limit and the water is increasing in the wells. Only a few of the sand wells in the pool are making water and those wells are mostly on the edge of the field.

The drilling zone inside the city limits of Oklahoma City may be extended during the week to within a few hundred feet of the wholesale district. The action was ratified at a joint meeting of the zoning board and the commission. The matter now goes to the council for final consideration.

20,000-Bbl. Well

Wirt Franklin Petroleum Corp.'s No. 8 Theimer, SE cor. NE, Section 2-11-3w, in the north end of the pool, blew in as a combination oil and gas well. The oil was estimated at 20,000 bbls. a day and the gas at 125,000,000 feet a day. The pressure was so great that an additional separator was to be erected before the well makes its initial gauge. Operators had the well shut in to prevent damage. It will be reopened in a few days.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 2 Hiddleston, SE cor. Section 19-11-3w, on the east side of the field, had a hole full of water in the Wilcox sand at 7,238-60 feet and is shut down. This test is believed to be on the east side of the fault line which runs through the east side of the pool in a northwesterly and southeasterly direction.

Big Well in North End

Interest in the Oklahoma City Field was in the north end during the early part of the week when the Phillips Petroleum Co.'s No. 1 Traders Compress, SW cor. Section 36-12-3w, blew in as a huge gusher and damaged the connections making it necessary to shut the well in before getting an initial gauge. Company men estimated the well at 1,300 bbls. an hour and the gas at 80,000,000 feet. The well flowed open about eight minutes and no accurate gauge could be taken. It is expected to be opened again in a few days. The total depth of the well is 6,396 feet in Simpson sand. The well is the most northerly producer in the pool and

(Continued on Page 191)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; cleaning out.

BECKHAM COUNTY

Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w	Drlg. 3,296 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,575 ft.

BLAINE COUNTY

Lowen et al's No. 1 Unknown, NW cor. SW NW Sec. 17-16-11w	Spudded and shut down.
Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 12-19-10w	Underreaming 3,678 ft.

CADDO COUNTY

Simms Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w	Rig.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w	Shut down 3,394 ft.

CHEROKEE COUNTY

Weaver & Proctor's No. 1 Benge, NE SE Sec. 8-14-21	Drlg. 200 ft.

CLEVELAND COUNTY

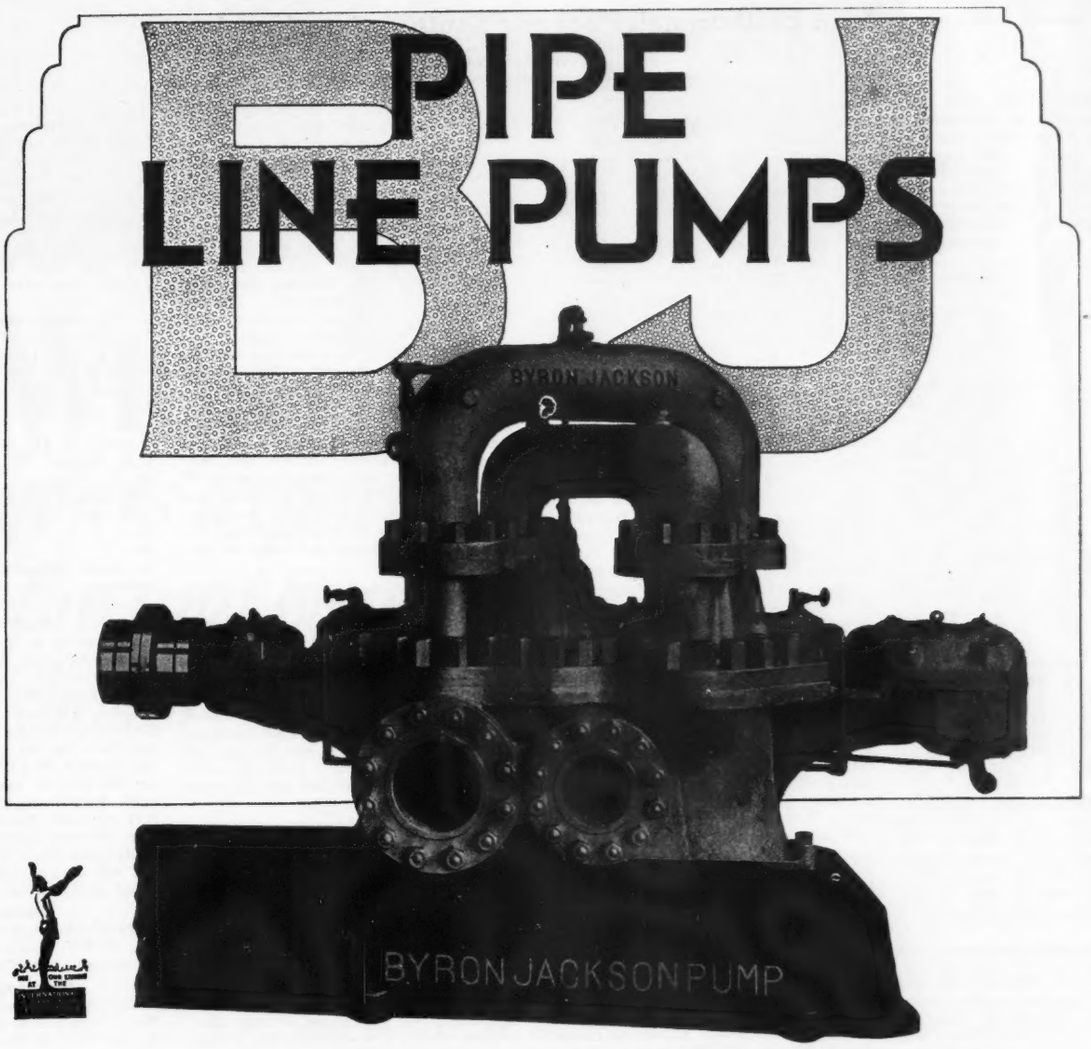
Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Drlg. 6,485 ft.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w	Shut down 3,130 ft.

COAL COUNTY

A. M. Van Orden's No. 1 Jamison, SE NW Sec. 31-1-9	Shut down 1,300 ft.

(Continued on Page 262)

PIPE LINE PUMPS



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Kansans Holding Down Production

Current New Operations Indicate Greatest Interest Is in Eastborough Pool and Southwestern Gas Area

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas operators in the past week centered their activities in Sedgwick and Stevens Counties. These widely separated counties led the State in new work for the week ending July 26. Each had five new locations. The State's production was holding steadily for the same seven days and averaged approximately 116,800 bbls. daily. The new operations in Sedgwick County were the result of recent completions in the Eastborough Pool, east of Wichita. Four of the new tests in Stevens County were announced by the Argus Production Co., which is developing a large gas production in the southwestern part of Kansas. The State had a total of 18 new locations in Reno, Ellsworth, Morris, Greenwood, Ellis, McPherson, and Chautauqua Counties.

There is little prospect of a pipe line being built into the Schurr Pool in Rice County, at the present time and the pool is shut down without any outlet for its production. Operators made an unsuccessful attempt to interest the Skelly Oil Co. in extending its pipe line from the Voshell Pool in McPherson County, to the Schurr Pool. The Prairie Oil & Gas Co. plans to make further curtailments and it may be some time before it can give any relief to operators in that pool.

On the east side of the Schurr Pool in Rice County, Independent Oil & Gas Co.'s No. 1 Mezger, SE cor. SW NE, Section 21-20-10w, is shut down at 3,330 feet, near the top of the Silicious lime. Vickers Petroleum Co. and others' No. 2 Binger, NE cor. NW SE, Section 21-20-10w, is shut down at 3,265 feet, near the pay horizon.

The meeting of Schurr Pool operators which was scheduled for July 24, was not held, owing to the fact that the Independent Oil & Gas Co., which has the only pipe line into the pool, stopped taking oil, and there was no need to talk about proration, when the pool is without an outlet.

Southwestern Kansas continues to occupy an important place in the development of oil and gas. Twenty-nine gas wells have been completed with a potential production of 225,000,000 feet per day. Stevens County has 15 drilling wells, 7 rigs and 14 locations made; Morton County has 12 drilling wells, 2 rigs and 2 locations.

New Sand in Cowley

Blankenship Petroleum Co.'s No. 1 Sloan, SW cor. NW NW, Section 28-30-3, in the northwestern part of Cowley County, discovered an unidentified sand at 2,874-77 feet, where oil rose several hundred feet in the hole. The crew bailed several hours and was unable to lower the fluid. A string of 5-inch casing will be landed on top of the sand and a production test made. The well was drilled on a lease with another well drilled by the Shell Petroleum Corp. which found production at 1,830 feet, getting a 40-bbl. well. Later the Shell corporation farmed out the balance of the northwest quarter to the Blankenship company and it drilled a test one location north of the first well. Blankenship Petroleum Co. missed the shallow sand. Some express the opinion the well is showing oil from the Bartlesville sand.

New Pool in Rice County

Another oil discovery in Rice County opens an entirely new producing area in the northwestern part of the county, and is attracting oil operators to that area. A well designated as J. H. Tatlock and others' No. 1 Ploog, C SW SE, Section 33-18-9w, found oil at 3,270 feet, and the well was bailed at the rate of 125 bbls. a day. The oil is high gravity and tests 46 degrees. It is believed to be coming from the Silicious lime. The operators express the opinion that the conglomerate was found at 3,210-50 feet. Tankage was being erected before the well is drilled deeper and a production test made. The discovery is on a block of 10,240 acres, on the Ellsworth arch which is believed to run in a northeast and southwest direction through the county. The test is owned 25 per cent by each of the Shell Petroleum Corp., Empire Oil & Refining Co., and Carter Oil Co., and 12½ per cent each by J. A. Hull Co. and Tatlock and Elwell. Shell Petroleum Corp. has taken over the operation of the well and all future developments. A pumping test will be made as soon as equipment and tanks are installed.

Eastborough's Deep Sand

The new deep sand discovery in the Eastborough Pool, in Sedgwick County, is believed to be the Simpson sand. Vickers Petroleum Co. and others' No. 1 Keys, NE cor. NW NE, Section 30-27-2, is shut down for a pipe line connection. The well flows from 5 to 6 bbls. an hour from sand at 3,238-42 feet. It swabbed 1,052 bbls. the first 24 hours. When the oil was first found it rose to the top of the hole in an hour. The Vickers Petroleum Co. may lay a pipe line to the well from its refinery at Potwin, a distance of about 25 miles. The Eastborough Pool now has two producing horizons and the field is expected to extend a mile north and south spreading over the area comprising the city's eastern suburbs.

The production in the chat horizon was extended more than a half mile by the Derby Oil Co.'s No. 1 Eastborough, SE cor. SW NE, Section 17-27-2, which has been drilled deeper and is making 70 bbls. an hour. The chat was found at 2,949-57 feet. It swabbed 1,012 bbls. in 24 hours.

The Eastborough Pool has six producing wells with a potential production of 4,500 bbls. a day. The production is being curtailed and the actual production is about 200 bbls. a day until a new pipe line outlet is found.

Locations for two more tests in Eastborough were made during the week. Derby Oil Co. is starting No. 1 Rimel, NW cor. NE NE, Section 30-27-2, with a rotary outfit, an east offset to the new Simpson sand well. Fisher & Lauck's No. 4, SE cor. SW SE, Section 19-27-2, is a north offset to the Simpson sand well.

The semiwildcat test, Spencer & Wixon and others' No. 1 Rounds, SW cor. SE, Section 17-27-2, Sedgwick County, a half mile east of the Travel Air Field, and about a mile northeast of production in the Eastborough Pool, found a hole full of sulphur water in the Simpson sand at 3,305 feet. The test indicates the production does not extend in a northeast direction. It will be abandoned. The National Refining Co. and Lario Oil & Gas Co. were interested in the test.

The wildcat test of Robertson & Hinkle and Phillips Petroleum Co., No. 1 Hillard, in Section 11-32-10w, Barber County, had a gas showing which was estimated at 1,000,000 feet. The showing was found in the chat at 4,395-4,410 feet. The test is reported to have had six other showings of gas at shallower depths.

The new wildcat well northwest of the Sellen Pool, in Russell County, is located about 2 miles from that area and is believed to open a new producing area instead of an extension. Prairie Oil & Gas Co., Slick, Pryor & Lockhart and others' No. 1 Berrick, SE cor. SW, Section 23-15-13w, had Gorham sand at 3,292-3,311 feet, where the oil rose 100 feet an hour in the hole. The well made 56 bbls. the first 15 hours swabbing and may be drilled deeper before it is completed.

Slick, Pryor & Lockhart and others have announced a new wildcat test for Kingman County. It is No. 1 Wetherall, NE cor. SW, Section 36-29-6w. It will be drilled with rotary equipment and on a block of about 7,000 acres.

Decker Gas Field Extended

McPherson Oil & Gas Co. and others' No. 1 Griffin, C NW, Section 14-18-2w, McPherson County, in the Decker gas pool, extends production a half mile south. The well gauged 8,300,000 feet from the chat at 2,925-44 feet.

A new semiwildcat test was announced for the Ritz Pool in McPherson County. Shell Petroleum Corp. and Tom Palmer have made location for No. 1 O. A. Ritz, SW cor. NW SW, Section 6-20-1w. It is located a half mile east and a quarter mile north of the Shell Petroleum Corp.'s No. 1 Miller, which is the largest producer in the State. Its initial production was 4,000 bbls. a day against a back pressure. It pumped 2,025 bbls. on the gauge of July 25.

Slick, Pryor & Lockhart's No. 2 Grattan, SW cor. NW, Section 34-20-3w, an extension well in the Voshell Pool, in McPherson County, swabbed 1,028 bbls. in 24 hours, averaging 42 bbls. an hour. It is a half mile north of the nearest producing wells in the pool. The oil was found in the Wilcox sand at 3,447-67 feet.

Tidal Oil Co.'s No. 1 Corbin, SE cor. NW Section 6-27-4, Butler County, about 4 miles northwest of Augusta, filled up 1,500 feet in one hour from the Simpson sand at 2,919-21 feet. It is estimated at 150 bbls. a day.

In the trend west of Madison in northern Greenwood County, Aladdin Petroleum Corp.'s No. 1 Harris, SE cor. NE SW, Section 19-22-11, is estimated at 100 bbls. from the Bartlesville sand at 2,025-71 feet, after a 120-quart shot. The three locations offsetting the well are to be drilled at once. Empire Oil & Refining Co.'s No. 3 in the SW cor. SE, Section 19-22-11, same company's No. 4 in the NW cor. NW SE, Section 19-22-11, and the third, T. K. Simmons' No. 3, in the NE cor. SE SW, Section 19-22-11.

North of Hamilton in the Patterson Pool, Empire Oil & Refining Co.'s No. 10 C. Patterson, in Section 36-23-11, Greenwood County, is expected to make 250 bbls. after a shot. The oil was found in the Bartlesville sand at 1,731-94 feet. On the east side of the pool the same company's No. 4 Nesbit, was estimated at 100 bbls. from the Bartlesville sand at 1,726-96 feet.

Butler County

Empire Oil & Refining Co. has the rig up for No. 102 Koogler, NE cor. SE, Section 20-26-5. Aladdin Petroleum Co. and Phillips Petroleum Co.'s No. 1 Semard, SW cor. SE NE, Section 14-27-7, is spudding. Empire Oil & Refining Co.'s No. 99 Koogler, NE cor. NW SE, Section 20-26-5, has been completed for 100 bbls. in sand 2,538-94 feet. Magnolia Petroleum Co.'s No. 63 Koogler, NW cor. SW, Section 21-26-5, made 130 bbls. in sand 2,476-83 feet. Empire Oil & Refining Co.'s No. 1 Covert, SE cor. SW SE, Section 3-28-5, is dry and abandoned at 3,214 feet.

Chase County

Steinbuchel and others' No. 1 Stevenson, C SW, Section 4-20-6, is dry and abandoned at 2,185 feet.

Chautauqua County

Leighty and others made location for No. 1 Garr, C NW SE, Section 5-33-9. J. A. Hull's No. 20 Kukuk, SW cor. SE NE, Section 24-32-4, has been completed for 100 bbls. in sand 2,968-3,041 feet.

Cowley County

Mid-Kansas Oil & Gas Co.'s No. 1 Brewer, C NE NW, Section 21-31-6, has been abandoned at 2,932 feet.

Edwards County

Dixie Oil Co. and Amerada Petroleum Corp.'s No. 1 McCarthy, SW cor., Section 22-25-17w, made 7,000,000 feet of gas in sand 4,469-72 feet.

Elk County

Silurian Oil Co.'s No. 1 Cheney, SE cor., Section 8-29-11, has been abandoned at 1,810 feet.

Ellis County

Phillips Petroleum Co. made location for No. 1 Kessler, SE cor., Section 32-11-17w. Location has also been made for No. 1 Karlein, NE cor. SE, Section 6-12-17w. No. 1 Herman, NE cor., Section 7-12-17w, is also a location.

Greenwood County

Tulsa Oil Co. made location for No. 1 Thrall, NW cor. NE NW, Section 7-24-12. Derby Oil Co. staked location for No. 1-C Beavers, NE cor. SE SW, Section 25-24-12.

Kingman County

T. B. Slick and Pryor & Lockhart moved the rig in for No. 1 Wetherall, NE cor. SW, Section 36-29-6w.

McPherson County

Sinclair Oil & Gas Co.'s No. 2 McCurdy, SW cor. SE SE, Section 33-20-3w, Voshell Pool, has been completed for 600 bbls. in Wilcox sand 3,277-3,313 feet. No. 3 McCurdy, SE cor. NW SE SE.

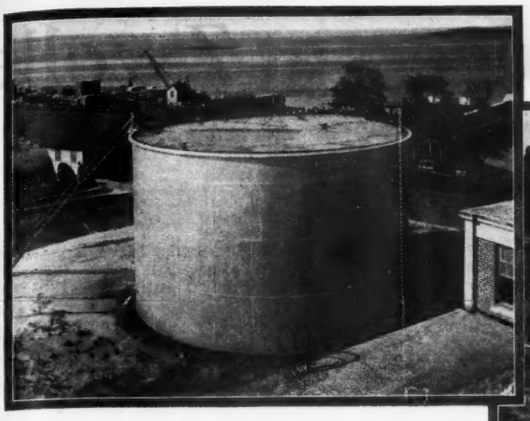
(Continued on Page 191)

WILDCAT OPERATIONS IN KANSAS

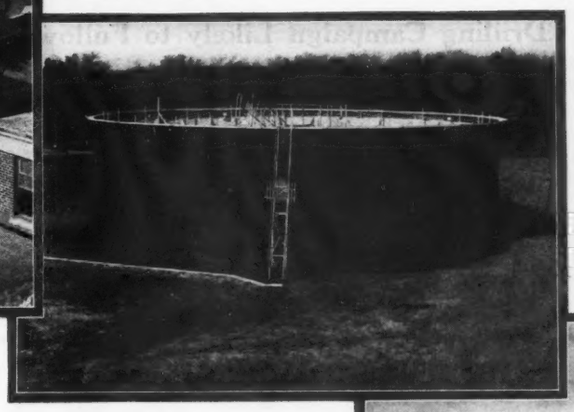
(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARBER COUNTY	
Barbara Oil Co.'s No. 1 Hamblin, SW NW Sec. 24-33-13w	Shut down 4,400 ft.
Phillips Pet. Co.'s No. 1 Powell, SE cor. SE Sec. 11-32-10w	Underreaming 6-in. csg. 4,365 ft.
BARTON COUNTY	
Slick and Prairie's No. 1 Rude, SW cor. Sec. 11-16-13w	Drlg. 1,580 ft.
BUTLER COUNTY	
Pioneer Pet. Co.'s No. 1 Crist, NW SE Sec. 33-26-4	Drlg. 1,750 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Spudding.
Aladdin Pet. Co.'s No. 1 Metzger, NW SE Sec. 23-28-3	Wilcox 3,000-18 ft.; water; shut down.
Gypsy Oil Co.'s No. 1 Osborne, NW SE Sec. 22-26-3	Drlg. 1,360 ft.
Joe Liggett's No. 1 Guanther, C SE NE NW Sec. 29-26-7	Drlg. 2,025 ft.
CLARK COUNTY	
Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w	Drlg. 6,400 ft.
CLAY COUNTY	
Grisler et al's No. 1 Tivier, SW cor. Sec. 19-8-3	Shut down 50 ft.
COFFEY COUNTY	
Ritchey et al's No. 1 Rossenmacher, C SE Sec. 36-22-13	Shut down 2,165 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Drlg. 950 ft.
COWLEY COUNTY	
Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4	Drlg. 1,755 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Drlg. 2,205 ft.
Cross' No. 1 Sanden, NE cor. Sec. 12-15-2	Abandoned.
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Abandoned 50 ft.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4	Shut down 2,935-43 ft.; water.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1	Drlg. 2,815 ft.

(Continued on Page 261)

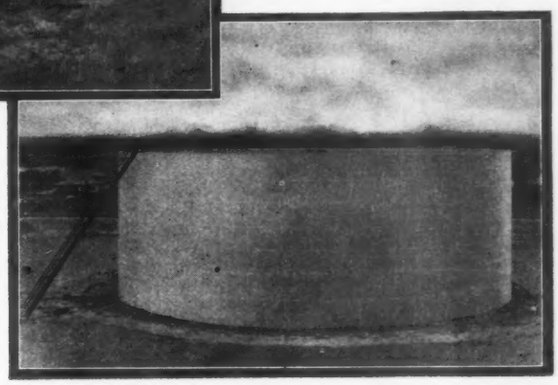


Left: Wiggins Pontoon Roof on 25,000-barrel Horton tank at Jacksonville, Florida.



Left: Wiggins Floating Roof, 95 ft. 6 in. in diameter, built for the Prairie Pipe Line Co. at Caney, Kansas.

Below: Humble Pipe Line Co. tank at Ingleside, Texas, equipped with a 117-foot Wiggins Breather Roof.



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Dallas	3341 Magnolia Bldg.	Chicago	2128 Old Colony Bldg.	Philadelphia	1615 Jefferson Bldg.
Birmingham	1536 Fiftieth St., N.	Detroit	1514 Lafayette Bldg.	Boston	1517 Consolidated Gas Bldg.
Atlanta	2154 Rhodes-Haverty Bldg.	Cleveland	2204 Union Trust Bldg.	San Francisco	1054 Rialto Bldg.
Houston	1119 Electric Building	New York	3147 Hudson Terminal Bldg.	Seattle	4323 Smith Tower

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OGJ-7-31-Gray

Two Big Shallow Producers at Zwolle

Drilling Campaign Likely to Follow Completions. Two Additional Gas Wells Finished at Jackson, Miss.

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., July 28.—Two wells in the 7,000 to 10,000-bbl. class in Zwolle, two more gas wells in the Jackson district of Hinds-Rankin Counties, Mississippi, and the week-end test of Lenz and others' prospective wildcat producer in Miller County, Arkansas, contributed this week to the rising tide of awakened interest in developments in this division. The immediate future offers possibilities of drilling on a huge block in north central Claiborne Parish and on a much smaller, though still sizable, block being assembled on the edge of Shreveport.

The new wells in Zwolle put an entirely different complexion on that pool's immediate future and if tests undoubtedly to follow are as successful they will be succeeded by a repetition of the drilling campaign of the first half of the year. The first of the two, Loring Oil Co.'s No. 1 Gardner in the SE NE, Section 27-8-12, surprised all Zwolle operators by making 3,000 bbls. of clean oil the first 24 hours flowing through a three-eighth inch choke into hastily constructed earthen storage. Total depth is 2,327 feet, 2 feet in chalky marl, one of the shallowest wells in the pool, and is thought to be not a crevice well producing from a break in the chalk but to have tapped an entirely new pay. One or two previous wells producing from approximately this depth have been small pumpers, A. H. Tarver and others' No. 2 Sabine State Bank for instance, which offsets the gusher to the east and pumped 45 bbls. from 2,327 feet. Tarver's No. 1 Sabine State Bank, a half mile west, pumped 7 bbls. initial from 2,680 feet. Location of these three wells is a mile north of the discovery well at Zwolle with one short lived producer midway between them. Tarver is reported arranging for another well in Section 25-8-12, a mile east.

Second Big Well

Excitement over this unexpected and entirely satisfactory development had not cooled a particle when the same company's No. 11 Bowman-Hicks in the SW cor. NW NW, Section 34-8-12, the discovery section, repeated the performance in detail, flowing an estimated 2,000 bbls. through a one-thirty-second inch choke from 2,382 feet. The two wells, a mile apart, producing from a level and formation heretofore barren or productive on only a small scale elsewhere in the proven area, have already started a revision of geological lore to be followed by a no less marked revision of drilling practices. So, instead of a campaign of deep drilling in the event the deep holes in Zwolle-Blue Lake territory should prove successful, the much cheaper and more definite alternative of developing a shallower, hitherto unsuspected, horizon is indicated as the program in Zwolle for the remainder of the year. Offsetting No. 11 on the west is Amerada Petroleum Corp.'s No. 1 Bowman-Hicks in the NE NE, Section 33-8-12, completed last March pumping 25 bbls., total depth 2,456 feet.

R. L. Gay, trustee, is figuring on No. 8 Bowman-Hicks, NW SW, Section 18-7-13, a mile east of Blue Lake production being a producer from the fact that it stood 1,500 feet in oil from 2,552 feet after deepening 58 feet from 2,494 where it stood 1,000 feet in oil at the end of a 30-day shut down. If it is it will be the first material extension of Blue Lake in either direction. A mile and a half south of the group of Blue Lake producers, Magnolia Petroleum Co., which has a large block of acreage it has been going over with geophysical instruments, has rig up for No. 1 Giauque in the SW cor. NW SW, Section 26-7-14. Ruston Drilling Co. abandoned three wells in Zwolle and Teteco Oil Corp.'s wildcat south of the pool was junked. The Ruston wells were No. 1 Bowman-Hicks, NE NE, Section 4-7-12, half a mile from nearest production on the south edge of proven territory, dry at 2,640 feet; No. 1-A Bowman-Hicks, SW SW, Section 35-8-12, half a mile south of the producers marking the present southeast corner of proven territory, dry at 2,690 feet; No. 1-B Bowman-Hicks, NW NW, Section 24-7-14, half a mile south of the farthest east producer in Blue Lake. The Teteco well, No. 1 Louisiana Long Leaf Lumber Co., in the NE NW, Section 8-6-12, was abandoned at 4,077 feet, unable to get a drill stem out of the hole after a blowout at 2,500 feet while drilling at the final depth. Standard Oil Co.'s No. 2 Ives in the SW cor. SE SW, Section 34-10-12, Pleasant Hill district of Sabine Parish, was lost when it went to salt water after blowing an estimated 10,000,000 feet of gas for two days, total depth 3,306 feet with the bottom 2 feet in the sand. Location is a quarter mile east of a prior successful gas completion by Bridges-Clark Oil Co.

Interest in Wildcat

Lenz and others' No. 1 Johnson in the NE SW, Section 24-15-16, Miller County, Arkansas, 20 miles east of town, is attracting attention. Last week the well was reported standing 450 feet in oil from 5 feet of sand, total depth 2,867 feet. As this is the first of 40 or 50 wells drilled in southwestern Arkansas during the past few years, and the first of Lenz' eight, to make any show at all, with one exception, and the only one making any such show as claimed for it, it has attracted more than ordinary attention. Since 6⅝-inch was set at 2,844 feet for the test there has been an element of secrecy concerning proceedings that has served to only pique interest in the wildcat previously aroused by the reported showing. The question seems to be how much of a show it amounts to rather than doubting there is any for there was enough oil for several early comers to the location to get samples. These show 29 gravity.

In connection with this activity, Arkansas Fuel Oil Co.'s plans for core drilling another block in Miller County are interesting. The block is of approximately 12,000 acres centering at Index, 10 miles north of Texarkana on the Texas-Arkansas line. Most of it is in Miller County with a small extension west into Bowie County, Texas. After drilling three core tests on this block, owned by J. K. Wadley of Texarkana, the company is to get 8,000 acres if the results of the tests are satisfactory to it upon which it is to drill a 3,000-3,500-foot test. First of the core tests is to be begun by August 15.

MISSISSIPPI

Pearl River Oil & Gas Co.'s No. 1 Marter in the SW NW, Section 12-5-1e, Rankin County, was the source of the week's greatest interest in developments on the Jackson anticline in Mississippi. Half a mile west of the same company's No. 1 Littlefield, completed last week at 2,447 feet as a 28,000,000-foot gasser, the Marter well blew in from 2,478 feet with an estimated 10,000,000 feet of gas and heads of sulphur water. The bottom is 6 feet in the chalk from which the other six wells in the Jackson gas field are producing and the water evidently is coming through a faulty seat or a leak in the casing. Gulf Refining Co.'s No. 1 Rainey in Section 13-5-1e, Rankin County, was listed as a completion this week, estimated 15,000,000 feet of gas at 450 pounds with a spray of salt water and a lighter spray of 13 gravity oil from 2,505 feet, total depth 3,607 feet. This is about the same production it made as the first well of any size in Mississippi when tested at the higher level in April. Extreme distances between producers in the Jackson Field have defined that area as proven for approximately 5 miles north and south and 2 or 3 miles east and west with the city of Jackson squarely in the middle of it.

Jackson Oil & Gas Co.'s No. 1 Taylor, SE SE, Section 35-6-1e, has been abandoned as a dry hole, in igneous rock at 3,245 feet. It was claimed to have had a show of oil at 2,910 feet. Love Brothers abandoned location for No. 1 Hilzim, SE SE, Section 35-6-1e. Three other tests in the Jackson area have 6⅝-inch cemented and will be important tests during the next week or 10 days. Cane River Oil Co.'s No. 1 Lufkin, Section 15-5-1e, set casing on top of the chalk at 2,465 feet, total depth 2,467 feet, and Dome Oil Co.'s No. 1 Elton, NE SW, Section 5-4-1e, at 2,436 feet, total depth 2,441 feet. Love Oil & Gas Co.'s No. 1 Gordon, SW NW, Section 8-5-1e, is drilling plug at 2,448 feet, total depth. On the east side of Pearl River at Jackson, Jackson Oil & Gas Co. has begun drilling No. 1 Patton in the SE NW, Section 17-5-2e, Rankin County, and Ohio Oil Co. has location for No. 1 Payne in the SE NE, Section 12-5-1e.

Zwolle's two big wells were at once reflected in daily average runs figures by an increase of 2,160 bbls. in shipments from that pool which, although other districts showed small gains over last week, was responsible for the increase of 2,700 bbls. in movement from the division as a whole. The daily average runs from the several pools were:

NORTH LOUISIANA

Caddo, light	9,725
Caddo, heavy	2,915
Homer	3,510
Haynesville	4,800
DeSoto-Red River	3,080
Elm Grove	445
Bellevue	640
Cotton Valley	2,030
Urania	5,245
Pleasant Hill	550
Sarepta-Carterville	2,950
Zwolle	5,000
Holly	1,250
Total	42,140
Last week	39,380
Increase	2,760

ARKANSAS

El Dorado	4,180
Smackover, light	5,170
Smackover, heavy	37,550
Stephens	930
Nevada County	1,010
Lisbon	950
Champagnolle	4,420
Bradley	65
Mount Holly	100
Urbana	1,070
Total	55,445
Last week	55,505
Decrease	60
Both states	97,585
Last week	94,885
Increase	2,700

Bienville Parish

While Nichols and others are arranging for a string of 6-inch to be set around 2,281 feet on No. 1 McDermott, NE NE, Section 28-18-6, Bienville Parish, two or three interests are engaged in assembling drilling blocks. The wildcat had 10 feet of 35.5 gravity oil at the bottom of 1 fourble of mud when drill stem test was run last week from 2,281-2,358 feet and there is quite some disposition to look on the wildcat as a likely "discovery well" in an area that has been much drilled during the last few years with definition of a salt dome structure the only result. Down in the Lake End district of southern Bienville Parish, Arkansas-Louisiana Pipe Line Co. completed its third gas well during the past few weeks, No. 1 L. K. Gardner, NE NE, Section 22-16-10, gauging 3,500,000 feet of gas, total depth 2,070 feet. No. 1 Thomas in the same section has 7-inch cemented at 2,568 feet, total depth 2,575 feet. As far southwest of Gibsland as the Nichols well is southeast—approximately 8 miles, J. P. Evans and others have location in the NE cor. NW NE, Section 31-18-8, Webster Parish, for No. 1 Crichton Co. Location is about in the center of a 5,000-acre block and 3 miles south of the Snyder "Ducote well" which created quite a flurry four or five years ago with a show of oil and gas and is said to be on a known gas structure.

Carterville District

The Texas Company's prolific Wilkinson lease in Section 36-23-12, Carterville district, developed another good producer when No. 12 in the NE cor. NE NE, made 525 bbls. initial from 10 feet of sand, total depth 3,154 feet. Woodley Petroleum Co.'s No. 1 Schuler, Section 13-17-12, Sligo gas district, gauged 26,000,000 feet at 1,025 pounds from the deep stuff at 2,456 feet.

Six miles west of the best part of Carterville, Triangle Drilling Co. is rigging up to drill No. 1 Bollinger in the SE SE, Section 36-23-13. Aided by major companies which have held leases on the well defined structure on which the location is made, they plan to go 3,000-3,500 feet and appear to be more than usually confident of getting production, their plans having gone so far as to determine how the Triangle's and surrounding holdings are to be drilled. These plans amount to adoption of the unit system and extend to repressuring after the flush period.

R. W. Norton is making another drill stem test on No. 1 Hill, Section 33-23-16, Caddo Parish, total depth 5,400 feet in a broken lime formation after three other tests during the past two weeks failed to develop anything to back up a gas showing. Falcon Oil Co. abandoned location for No. 4 Muslow in Section 29-20-15, Moringsport district.

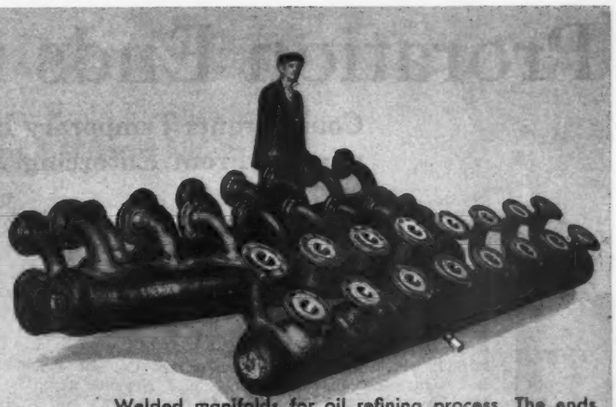
Frank Melat apparently has a producer 2½ miles east of the five wells furnishing all the production from the Holly district of DeSoto Parish. His No. 1 Schryver in the NW SW, Section 35-14-13, is waiting for standard rig with 150 feet of oil in the hole from broken sand at 2,790-2,817 feet. Six and five-eighths-inch casing was cemented at 2,778 feet and the hole bailed dry at 2,782 feet but after standing three or four days filled up 50 feet in oil. In the southwestern part of the parish, Benson Oil & Gas Co. abandoned No. 1 Harris in Section 6-10-13, which has been standing temporarily abandoned at 3,650 feet after a show of gas at that depth bailed dry last February. Davis and others' No. 1 Moore, Section 12-11-6e, has been dropped from the report as a dry hole at 1,430 feet.

Ruston Drilling Co.'s No. 1 Tucker & Platt, Section 8-20-6, Morehouse Parish, tested salt water at 2,488 feet and is drilling sand and shale in the red beds at 2,653 feet. Pelican Natural Gas Co. has made location for the second wildcat going into Morehouse Parish, No. 1 Tensas Delta Land Co. in the NW SW, Section 17-18-6e. Industrial Gas Co. completed No. 1 Fee, Section 3-20-4, Morehouse, gauging 2,784,000 feet of gas at 840 pounds, total depth 2,148 feet.

Four wells in Richland added over

(Continued on Page 200)

WEST



Welded manifolds for oil refining process. The ends were closed by rolling down the pipe and welding in end plates.

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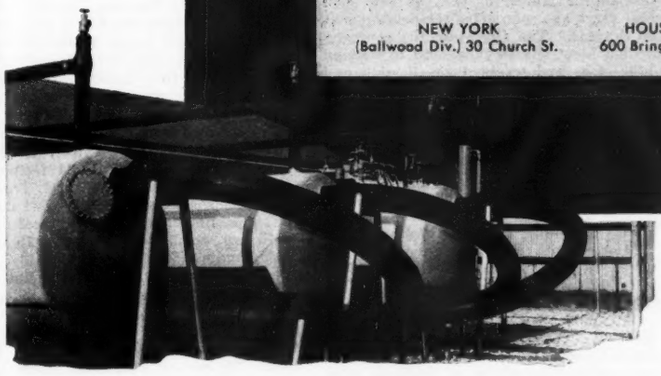
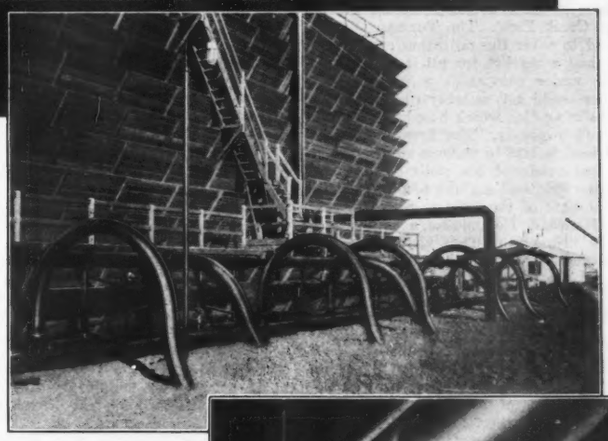
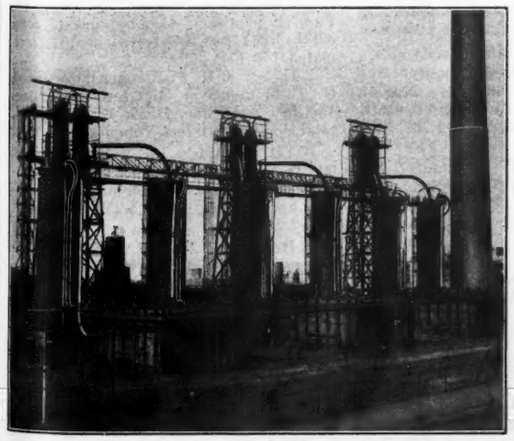


A large number of gasoline plants also use Midwest fabricated piping.

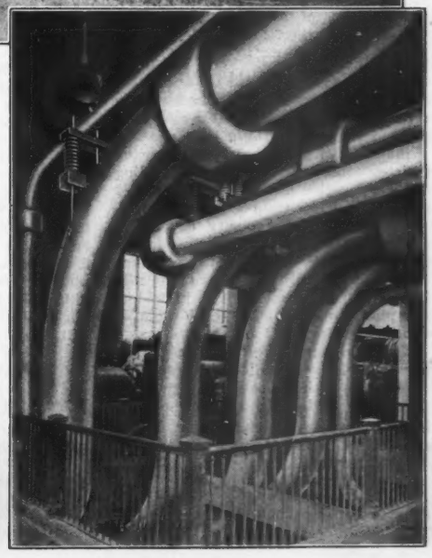


Bends for a gas line into Kansas City.



These Dubbs Cracking Units at Parco refinery of the Producers & Refiners Corp., have Midwest piping with Midwest Joints.

Midwest piping in a large western power plant.



PIPING SERVICE

Proration Ends in Darst Creek Field

Court Grants Temporary Injunction Restraining Railroad Commission From Enforcing Agreement Entered Into by Producers

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., July 28.—Darst Creek proration ended last Friday morning when operators began to produce without restriction and the expectation was that the daily allowable runs of 20,389, which was the last figure given out, would soon be exceeded three or four times. Humble started Friday running at the rate of about 15,000 bbls. daily and Gulf about 10,000. Magnolia owns the biggest well in the field, which came in for 42,000 bbls. initial gauge, and there are other big wells. If all are opened up there is no telling what the field will do. At any rate, it will give the geologist and the production engineer an opportunity to see what the field will do as between restriction and no restriction. There have been claims that restriction was a benefit to the field and would keep the water back. There have been others equally competent to judge who assert the field would soon have been ruined by proration.

Last Wednesday, J. S. Abercombie and the Harrison Oil Co., both of Houston, obtained a temporary injunction at Austin, Tex., in the fifty-third district court preventing the Railroad Commission from enforcing proration in the Darst Creek Field. Proration in that field was primarily a voluntary agreement entered into by the major companies in the fall of 1929.

There have been many factors in the Darst Creek Field. The Turman Oil Co. refused to enter the proration agreement, as it had a market for all its oil. Some of the major companies wanted all the oil they could get, notably the Louisiana Oil Refining Co., which bought the North & South property. The breakup of the agreement is laid to various sources. Turman has produced his wells to capacity from the first and nothing new has arisen in that part of the field to upset things. The Railroad Commission's hands are tied by injunction. That body made formal demand Friday on the attorney general asking that he at once take such steps as might be necessary to ask for an immediate dissolution of the temporary injunction. However, at least 10 days' notice would have to be given to the Abercombie and Harrison Oil Co. at Houston. There is therefore no possibility, seemingly, of any proration unless the operators in the field again enter into a voluntary agreement.

Pettus Field

There were interesting developments in the Pettus Field the past week, and some disappointments. Grayburg Oil Co.'s No. 1 Kimball, the test that was reported completed some weeks ago and extending the field 7 miles southwest, is not yet really a well. The trouble is mechanical, as there seems to be plenty of oil. A back pressure valve is in the hole. Screen was set and trouble developed that makes it necessary to pull the screen and the valve also. The company, it is understood, plans to cement off the bottom of the hole, leaving the screen and valve in it. The cementing off is to shut off water trouble. It will then probably whipstock through the casing and go back again to the sand.

Daily average production of the Pettus Field for the week ending July 19 was 5,261 bbls. from 11 wells with one of them producing for only one day of that week. For the week ending July 26 the daily average was 6,550 bbls.

The biggest completion for the week was the Cosden Oil Co.'s No. 2 McKinney which came in for 2,000 bbls. daily on half-inch choke in sand at 3,670-82 feet. The same company's No. 3 McKinney was ready to be brought in. No. 2 is about 650 feet north of No. 1 and No. 3 is two locations west of No. 1.

Houston Oil Co. got a 300-bbl. well in the No. 1 Neuman which is an east offset to the Cosden's No. 1 McKinney and the Cosden's No. 1 McKinney it will be remembered was the discovery well in this spot 1 mile west of the town of Pettus and 2½ miles west of the Pettus discovery well. This production is about 200 feet shallower than in the discovery well. Houston Oil Co.'s No. 1 Neuman got the sand at 3,672-76 feet.

At the close of last week the Rio Bravo Oil Co.'s No. 1 S.A.&A.P. Railroad, just north of the Pettus depot, had cored sand at 3,904-07 feet and with a saturation that makes it in all probability a well. This is in the western part of the townsite of Pettus and the townsite is about a half mile square. Buchanan & Ogden in the southeastern part of the townsite on Block 38, topped the sand at 3,915 feet and was to swab Monday. It will doubtless be a well.

S. R. C. Oil Co. on Block 37, next south of Buchanan & Ogden, topped the pay at 3,901 feet, but considering elevations at about the same depth as Buchanan & Ogden, and was bringing the well in Saturday.

Batex' No. 1 Burnett, a south offset to the Cosden's No. 1 McKinney, came in for 250 bbls. daily.

There were just 50 operations listed in the Pettus area at the close of the week. Several of these are around the Grayburg well 7 miles southwest of the field but which it is presumed will all connect up and some are in territory a little to the side and properly classed as semi-wildcats but all in the Pettus area.

Escobas Pool

Escobas or Muckelroy Pool in the Laredo district still constitutes half of the activity in that district. Last week there were four oil wells completed in the new pool with a total initial production of 570 bbls., one of them, the A. L. Edgington No. Trevino, flowing 325 bbls. Allied Gas Co.'s No. 7-A Trevino came in for 100 bbls., same company's No. 8-A for 75 bbls. and the S. R. C. Oil Co.'s No. 8-B Cuellar for 70 bbls. Edgington-Niles completed the No. 2-B Trevino for 20,000,000 feet of gas and S. R. C. Oil Co. completed the No. 7-B Trevino for 4,000,000 feet of gas spraying oil.

Seven new locations were announced in the Laredo territory, two of them in the Escobas Pool and two in the new pool in the north end of the Cole gas and oil area being developed by French Oil Corp. and Magnolia Petroleum Co.

In Brooks County Humble Oil & Refining Co.'s No. 2 Singer in Survey 412 has got down to 4,412 feet where it has set casing to protect the hole. This is back at about the same depth where the No. 1 was lost, and from this on down it will be new information on that territory. This hole is a few miles south of the No. 1 Lasater drilled by the Houston Oil Co. which opened a new field but still consists of only one well. The Houston Oil Co. is down 2,792 feet on another test, however. Production in the discovery well was at 4,112 feet.

Magnolia Connects Up

There is a strong demand for all Laredo crude. Practically everything from that field is low gravity oil with the exception of a few high gravity wells in the Carolina-Texas Field in Webb County and a few 1,950-foot wells in the Schott Pool at Mirando City. The low gravity crude has been refined mainly for lubricating oil but when cracked has antiknock qualities that has resulted in the crude being shipped to Oklahoma points for blending the cracked gasoline with other gasolines.

As a result there is no overproduction in the Laredo district though the oil is taking the posted price of 85 cents a barrel. Magnolia has extended its pipe line to the new Escobas Pool which had already been tapped by the Humble extending its pipe line.

All the development in the Escobas Pool is being done by independents. T. B. Slick is interested in the S. R. C. Oil Co. and is the only big operator interested. There will be no proration of the field.

Cartwright Pool

It may be some days before the Houston Oil Co. does anything further with its No. 1 Boothe at the north end of the Cartwright gas field in the southeastern part of Live Oak County. The well was reported to have filled 300 feet in oil in a drill stem test in sand at 5,252-57 feet two or three weeks ago. The company is waiting for a heavier rig before attempting to set casing. This test is about three-quarters of a mile north of the nearest gas production in the field, the gas production being at around 2,150 feet. The company drilled a deep test in the middle of the gas area several years ago soon after the development of the gas. The first test the company drilled blew out from a sand at around 1,000 feet and wrecked the derrick and went wild.

Withdrawals of gas from Live Oak County for the last month for which reports are available was 568,280,000 feet for the month and practically all of it came from the Cartwright Field. This field has been producing now for several years.

Building Cracking Plant

Misko refinery at Mirando City, in which O. W. Killam, discoverer of the Mirando district, is interested is starting the erecting of a 1,200-bbl. cracking plant at Mirando City in connection with the refinery. This refinery has been an 800-bbl. lub plant. It will crack the Mirando crude using the crude as it comes from the field and also considerable that is left by the lub plant after taking the lub oil out. Mr. Killam expects to market this gasoline for blending purposes to other refineries which use it for blending to get the antiknock quality it possesses.

COMPLETIONS

Kohler Pool—Duval County

Humble Oil & Refining Co.'s No. 47 Kohler, 1,155 feet east line, 350 feet south line, Survey 172, total depth 1,767 feet, completed 10 bbls.

Albercas Pool—Webb County

Sun Oil Co.'s No. 14 Yeager-Strohman, 1,600 feet north line, 375 feet west line of 160-acre tract, Share 5, Las Animas grant, total depth 2,175 feet, completed 25 bbls.

Cole Pool—Webb County

French Oil Corp.'s No. 1 "B" R. Benavides, 150 feet south line, 150 feet east line, Survey 661, total depth 2,357 feet, flowing 75 bbls.

Magnolia Petroleum Co.'s No. 3 A. Benavides, 550 feet north line, 150 feet east line, Survey 660 feet, total depth 2,347 feet, completed 40 bbls.; No. 4 C. Benavides, 150 feet south line, 150 feet west line, Survey 662, total depth 2,350 feet, completed 85 bbls.

Jennings-Cuellar—Zapata County

South Texas Producing Co.'s No. 2 F. G. Martinez, 2,878 feet north line, 2,498 feet west line, Survey 6, total depth 1,878 feet, completed 20,000,000 feet gas.

O. W. Killam's No. 24 Cuellar, 2,926 feet northwest line, 150 feet northeast line, Cerrito Blanco grant, total depth 1,543 feet, completed 100 bbls.

Production

Daily average production of the pools of Southwest Texas during the past week follows:

Branyon	30
Bruner	20,361
Buchanan	227
Chapman	9,750
Dale	355
Darst Creek	35,990
Kingsville	115
Larremore	32
Luling	9,452
Lytton Springs	786
Manford	360
McMullen	35
Medina	22
Mirando	11,329
Pettus	5,042
Somerset	1,570
Yoast	450
Total Southwest Texas	95,906
Week ending July 19	88,186
Increase	7,720

Jennings-Muckelroy—Zapata County

Alamo Drilling & Leasing Co.'s No. 3 Trevino, 750 feet east line, 150 feet north line, Block 1, Survey 66, total depth 1,247 feet, completed, estimated 100 bbls.

Allied Gas Co.'s No. "A" 3 "a" I. G. Trevino, 160 feet southwest line, 565 feet northwest line, Block 6, Survey 65, total depth 1,250 feet, completed 125 bbls.; No. "A" 5 I. G. Trevino, 150 feet northwest line, 750 feet southwest line, Block 6, Survey, total depth 1,249 feet, completed 150 bbls.; No. "A" 6 I. G. Trevino, 150 feet east line, 1,050 feet southeast line, Block 6, Survey 65, total depth 1,246, completed flowing 400 bbls.; No. "A" 7 I. G. Trevino, 450 feet southeast line, 170 feet southwest line, Block 6, Survey 65, total depth 1,234 feet, completed 100 bbls.; No. "A" 8 I. G. Trevino, 1,050 feet southwest line, 150 feet northwest line, Block 6, Survey 65, total depth 1,247 feet, completed, estimated 75 bbls.

Edgington & Niles' No. 2 "B" I. G. Trevino, 450 feet southwest line, 150 feet southeast line, Block 4, Survey 65, total depth 1,247 feet, completed, 20,000,000 feet gas, spray oil; No. 5 I. G. Trevino, 450 feet south line, 150 feet west line, Block 26, Survey 412, total depth 1,237 feet (corrected depth), completed flowing 325 bbls.

Nordan & Morris & Grimm & Yakey's No. 1 C. Bustamente, 150 feet northeast line, 1,300 feet northwest line, Share 33, Fansler partition, Comitas grant, total depth 1,241 feet (corrected depth), estimated 100 bbls.

J. G. Nix & R. F. Blankenship's No. 1 G. T. Montemayor, 150 feet south line, 150 feet west line, Block 1, Survey 64, total depth 1,291 feet, completed 50 bbls.

W. R. Shankle's No. 2 E. Gutierrez, 600 feet northeast line, 2,989 feet northwest line, Share 4, Fansler parition, Comitas grant, total depth 1,259 feet, completed 130 bbls.

S. R. C. Co.'s No. 2 "A" Trevino, 490 feet east line, 150 feet west line, Block 8, Survey 66, total depth 1,260 feet, completed 65 bbls.; No. 2 "B" F. Cuellar, 150 feet northwest line, 1,590 feet southwest line, Block 12, Survey 65, total depth 1,246 feet, completed 150 bbls. (location changed); No. 3 "B" F. Cuellar, 150 feet northwest line, 150 feet northeast line, Block 7, Survey 65, total depth 1,245 feet, completed 100 bbls.; No. 4 "B" F. Cuellar, 150 feet northeast line, 490 feet northwest line, Block 7, Survey 65, total depth 1,244 feet, completed 100 bbls.; No. 6 "B" F. Cuellar, 1,290 feet southwest line, 150 feet northwest line, Block 12, Survey 65, total depth 1,244 feet, completed 65 bbls.; No. 7 "B" F. Cuellar, 490 feet

(Continued on Page 187)

Vinton Area Attracting New Interest

Drilling Play North of the Original Field Results in a Series of Good Wells at a Depth of 3,400 to 3,500 Feet

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., July 29.—After a long period of routine development, Vinton, one of the older coastal dome fields in Louisiana, has come back into the news with the completion of a series of good wells on the north side of production. The new wells are in a recently opened area 600 to 700 feet north of the original field and come as a result of a drilling play which has been going on there following the finding of oil in a horizon around 3,400-3,500 feet.

Chief among the wells completed in this new area were Gulf Refining Co.'s No. 2 and 3 Gardner, which Saturday were flowing approximately 3,000 bbls. of oil daily. The former was brought in flowing 1,500 bbls. of pipe line oil daily on a three-eighths inch choke from sand at 3,411 feet, and the latter 2,100 bbls. daily at 3,446 feet. Wilson-Broach's No. 3 Wilson, which the Gulf wells offset, came in flowing 800 bbls. of fluid, 10 per cent sediment and water, from sand at 3,496 feet, and Supreme Oil Co.'s No. 1 Gray, in the same area, made 500 bbls. daily.

This area came into the limelight with the completion by Vinton Petroleum Co. of its No. 7 Gray, which was estimated as good for 3,000 bbls. daily. This well, which sanded up, was cleaned out the past week and put on the pump, good for around 200 bbls. daily. Continued development of this pool is indicated by the new work starting up. Vinton Petroleum Co. is drilling No. 8 Gray and has made location for No. 9. Gulf Refining Co. is rigging up for No. 4 Gardner and Wilson-Broach is starting up on its No. 4, offsetting the Gulf.

Follows Routine Feeling Around

Development of this new pool is following a routine feeling around on the north side of Vinton, which has been going on for some time. Gulf Refining Co. has been doing some drilling on its Star Vincent leases to the eastward and Vinton Petroleum Co. has been keeping a rig going.

Among other developments on the Gulf Coast late last week was the completion of a second producer on the southwest side of Barbers Hill. This well, Yount Lee Oil Co.'s No. 2 Zadie Fisher, came in flowing 1,500 bbls. daily from a sand at a total depth of 5,720 feet. Sixty-six feet of screen was set in the hole at that depth. The well is flowing through tubing and a half-inch choke. The oil is 32.4 gravity.

This well is a short distance to the north of the same company's No. 1 Zadie Fisher, the discovery well of the deep production on the southwest side of the dome. The latter, completed last month, is producing from a lower sand at a total depth of 6,661 feet. It made an initial production of 3,100 bbls., but soon dropped off and showed considerable water, and then had to be put on the pump. However, two weeks ago it created a sensation when, after pumping less than 600 bbls. daily for some time, it unexpectedly came back in flowing at the rate of 7,600 bbls. daily.

Two other small producers were completed at Barbers Hill the past week, these being Sinclair Oil & Gas Co.'s No. 7 Wilburn on the east side, and Yount Lee Oil Co.'s No. 11 Chambers on the south side. The latter was a former producer deepened.

New Deep Sand Opened

Of interest at Barbers Hill is the new deep sand opened for production on the east side of the dome. The main producing horizon has ranged from 5,200 to 5,500 feet, but several weeks ago Humphreys Corp. deepened one of its old wells, No. 3-H Kirby, in that horizon to a sand found below 6,400 feet. A second well, Sinclair Oil & Gas Co.'s No. 3 McKinney, now has been deepened to this sand and at a depth of 6,427 feet was swabbing late in the week. The Humphreys well was small and nothing large is promised in the Sinclair test, but it is likely that the discovery of this sand will be followed by the deepening of a large number of the former 5,200-5,500-foot wells which line the east side of the dome.

The new Hankamer Field of southern Liberty County added another fair producer with the completion by Gulf Production Co. of its No. 7 Boyt flowing 400 bbls. of pipe line oil daily from a sand and shale at 4,120 feet. The oil is 25 gravity. This is the seventh producer in the field. Production is from the deeper of the two pay levels so far developed in the field, this well being at a total depth of 4,120 feet.

Completions at Refugio during the week were limited to one addition to the 3,700-foot field and one deep well. The latter, Union Producing Co.'s No. 4 Powers, however, proves a possible new deep sand on the east side of the field as its production is from a total depth of 5,710 feet. The well at present is a gas producer, but is spraying high gravity oil which may increase in volume. With the exception of one other well, Saxet Oil Co.'s No. 2 Ryals, other wells in this particular area have been from a 5,400-5,500-foot level.

May Be Fourth Deep Productive Sand

If this is a new sand it represents the fourth deep productive sand in the field, not including the 3,700-foot horizon. These sands are found at approximately 5,500 feet, 5,700 feet, 5,900 feet and 6,400 feet. Only the 5,500-foot sand at present is extensively productive, the other horizons being represented only by one or two wells each.

The next development at Refugio is expected in Independent Oil & Gas Co.'s No. 1 Shelly, which late in the week was testing at a total depth of 6,446 feet. This test, a west offset to Union Producing Co.'s No. 1 O'Brien, the discovery well of the 5,500-foot sand, tested salt water at that level and has been deepened to the 6,400-foot sand. It is approximately 2,000 feet to the northeast of Mission Drilling Co.'s No. 1 Moss, Block 110, of the town blocks, the only producer at present in that sand. It is in a direct line with Union Producing Co.'s No. 1-A Rose Lambert, nearly 4,000 feet still further northeast, the discovery well of the sand, which soon after completion went to water and was abandoned.

The abandonment of Humble Oil & Refining Co.'s No. 1 Sabine Tram at Devers, Liberty County, and Pure Oil Co.'s No. 1 Kirby at Cove, northern Chambers County, marks the failure of two more first tests on recently discovered geophysical salt dome prospects. Neither found indications of a dome. These are two of a long string of geophysical prospects which have been drilled upon for the first time this year and have been found disappointing.

Among additional completions during the week were one well each at Bayou Blue, DeWalt, Raccoon Bend, Saratoga, Spindletop and Port Barre. Abandonments included a wildcat at Hockley, one at Big Hill, two at Clay Creek and a number of lesser interest.

Daily average production of coastal fields for the week ending July 26 was:

SOUTHEAST TEXAS

Allen	49
Barbers Hill	19,346
Batson	1,156
Big Creek	4,169
Brenham	170
Blue Ridge	1,580
Boling	1,129
Clay Creek	1,485
Damon Mound	675
DeWalt	12,114
Esperson (Sheeks)	2,352
Fannett	767
Goose Creek	4,565
Hankamer	1,866
High Island	953
Hull	9,305
Humble	19,564
Jasper County	20
Lost Lake	356
Markham	330
Moss Bluff	69
Nash	301
North Dayton	1,680
Orange	2,194
Orchard	2,285
Pierce Junction	11,172
Port Neches	1,216
Raccoon Bend	12,033
Refugio	34,407
Saratoga	1,074
Sour Lake	2,208
South Liberty	3,911
Spindletop	17,740
West Columbia	5,422
Total Southeast Texas	177,663
Week ending July 19	179,729
Decrease	2,066

SOUTH LOUISIANA

Anse La Butte	32
Bayou Blue	85
Bayou Boullion	53
Black Bayou	550
Edgerly	544
Jennings	2,143
Hackberry	2,824
Lake Barre	1,628
Lake Peito	40
Lockport	3,321
Port Barre	3,762
Sorrento	147
Starks	662
Sulphur	4,375
Sweet Lake	103
Vinton	4,642
Welsh	130
White Castle	1,714
Total South Louisiana	26,255
Week ending July 19	25,419
Increase	836
Total Gulf Coast	203,918
Wek ending July 19	205,148
Decrease	1,230

WILD GASSER IN CITY OF REFUGIO CATCHES FIRE, ADDING TO DANGER

By Neil Williams

HOUSTON, Tex., July 29.—Defying all efforts to control it since it blew out June 25, Houston Oil Co.'s No. 1 Strauch at Refugio created a far greater hazard to the city of Refugio and operations generally there when it caught fire Sunday morning, July 28, at 1 o'clock, presumably from a spark caused by the striking of a piece of rock or metal.

Considering the location of the well within the townsite, four blocks from the public square and in the midst of a town lot drilling play, the wild burning well promises one of the most serious situations ever faced in a Gulf Coast oil field. The location of the well is in Block 20, which is in the east part of town where deep development has been spreading. Should the blaze ignite the numerous frame buildings surrounding it it is likely that the flames could spread rapidly through the town and to the many producing wells of the 3,700-foot sand field which extends well into the west side, with a well to nearly every city block.

Controlling of the wild gasser, the most stubborn ever encountered on the Gulf Coast, has been a serious problem and the last week it was placed under the direct supervision of the oil and gas division of the Railroad Commission. Although it has been impossible to figure the volume or pressure, it is estimated that the well has been producing not less than 50,000,000 feet of gas daily. It had an original pressure of 2,000 pounds.

The well blew out while operators were trying to run a string of 7-inch casing in the hole preparatory to testing the oil sand found at a total depth of 5,468 feet. An attempt early this month to close the well was almost successful. A connection was made on the 13⅜-inch casing with die nipples and valves but as the well was gradually closed in a nipple below the gate split and tore the well out again. Later this was repaired and operators for a short time closed the gasser in, but as the foundations started to crumble threatening a crater and the loss of derrick and rig the well was opened and permitted to blow.

The danger from the burning well is increasing in view of the fact that around the well the ground is crumbling and gas fumes are breaking through. This will make it difficult for operators to confine the blaze to the well and will greatly hamper efforts to fight it. The tremendous force of the well blowing for more than a month has lifted the casing a height of three joints so far and part of the string is protruding from the hole and wobbling from side to side with the pressure of the gas.

At present there are no residents for blocks around, all having moved out with their possessions when the well first blew out. However, even far outside the zone roped up, the country has been sprayed with an oily sand and residents in other parts of the town have found living uncomfortable and dangerous. The oily sand probably also will add to the hazard of fire should the blaze spread from the well.

OIL WELL MAY MERGE WITH NATIONAL TUBE

NEW YORK, July 26.—Benjamin F. Harris, president of Oil Well Supply Co., has confirmed the report that his company has given the United States Steel Corp. an option for the sale of its business. The option expires August 25, and a special meeting of Oil Well Supply Co. stockholders will be called shortly to ratify the sale.

Exercising of the option by the United States Steel Corp., it is reported, will be followed by the consolidation of Oil Well Supply with National Tube Co., a subsidiary of the steel corporation.

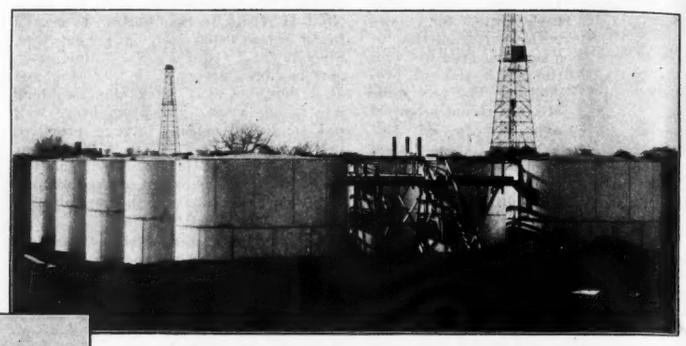
Oil Well Supply, in addition to manufacturing machinery and equipment for oil and gas fields, operates approximately 90 stores for the sale of its products in world oil fields. The company operates plants at Oil City, Pa.; Oswego, N. Y.; Braddock, Pa.; Tulsa; Poplar Bluffs,, Mo.; Los Angeles, and Tampico, Mexico.

COLOMBIA PRODUCTION

April production of crude petroleum in Colombia totaled 1,646,000 bbls. according to a report to the United States Department of Commerce.

Can you spell LOWER UPKEEP *in* 5 LETTERS?

The answer is PETRO, an all-purpose paint developed by du Pont to cut maintenance costs in the oil industry. Read how this one pre-tested finish protects wood, plaster, concrete, and metal surfaces at the refinery and in the field.

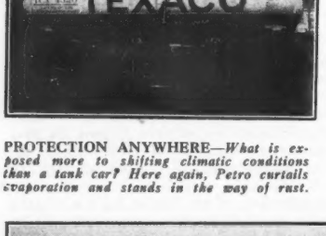


EVAPORATION BARRED!—*You can thank Pre-Testing for that. Pre-Testing established the formula that combined three ideal pigments in balance and clinched a high, permanent light and heat reflectiveness for Petro Paint.*

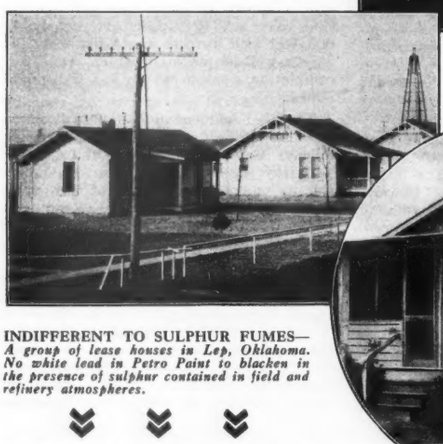
ONE PAINT designed to do many jobs . . . . and do each better than it had been done before. No wonder PETRO spells lower upkeep costs for lease houses and refinery and field plants and equipment!

Petro Paint meets practically every normal condition . . . from the darkening sulphur fumes to the bleaching semi-tropic sun, with greater resistance than any of the white lead paints.

Obviously such a finish could be no chance discovery. Pigments, vehicles, extenders, driers . . . almost without end were tested separately. These ingredients were combined in many ways—and tested again. And when a formula for Petro Paint was finally evolved, the paint was pre-tested in every way possible. By accelerated conditions in the laboratory. By exposure on test fences all over the country. By actual use in the refinery and in the field.



PROTECTION ANYWHERE—*What is exposed more to shifting climatic conditions than a tank car? Here again, Petro curtails evaporation and stands in the way of rust.*



INDIFFERENT TO SULPHUR FUMES—*A group of lease houses in Lep, Oklahoma. No white lead in Petro Paint to blacken in the presence of sulphur contained in field and refinery atmospheres.*

LEAD-ZINC PAINTS SUCCUMB *to blistering Florida sun on Miami test house . . . failed by cracking. But Petro Paint showed no cracking, just a slight chalking over same period.*

This pre-testing proved beyond all doubt that the three pigments in Petro Paint were combined in perfect balance with drier, extender, and vehicle to offer an unusual resistance to sulphur fumes . . . to work equally well on wood, plaster, concrete or metal . . . to replace failure by cracking with a slow chalking that keeps surfaces clean and always smooth . . . to maintain a higher heat and light reflectiveness that curtails evaporation on tankage. Petro Paint covers better and spreads easier than ordinary mixed paints. And it was found that a new drier allowed application of Petro Paint under adverse weather conditions.

The pictures on this page tell a story of the use of this long-lasting, universally useful and protective paint. You can get this remarkable new finish in Black, White and a wide range of colors. For complete information on application and use of this paint in reducing maintenance costs send for Technical Bulletin No. 4. Write E. I. du Pont de Nemours & Co., Inc., Dept. OG 7, 1616 Walnut St., Philadelphia; 2100 Elston Ave., Chicago; 351 California St., San Francisco.

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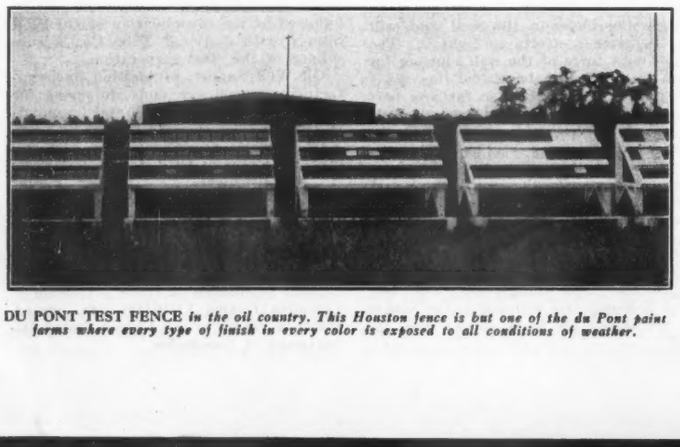
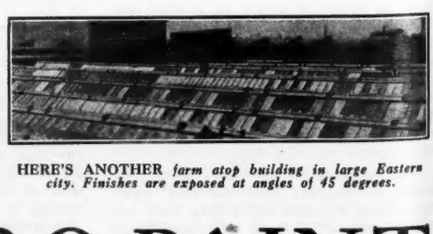


DU PONT TEST FENCE *in the oil country. This Houston fence is but one of the du Pont paint farms where every type of finish in every color is exposed to all conditions of weather.*

"Save the surface and you save all"—Paint

DU PONT

REG. U. S. PAT. OFF.



HERE'S ANOTHER *farm atop building in large Eastern city. Finishes are exposed at angles of 45 degrees.*

PETRO PAINT

Sixteen New Locations in Hobbs Pool

One Completion Made 353 Bbls. in 30 Minutes. New Operation in Eddy County. Black Oil Discovery on Byron Dome, Wyoming

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., July 29.—Sixteen new Hobbs locations were announced the past week, three drilling wells were temporarily abandoned under the agreement, and one well was completed. The Tidal Oil Co.'s No. 1 Grimes, which came in as a 20,000-bbl. well, flowed at the rate of 24,000 bbls. a day on a 3-hour test, and the Gypsy Oil Co.'s No. 1 Grimes increased to 18,000 bbls. when put on production. George F. Getty, Inc.'s No. 2 McKinley, the only completion, gauged 353 bbls. in 30 minutes. One new operation was reported in Eddy County in Flynn, Welch & Yates' No. 58, and one wildcat in Sandoval County was abandoned.

The Continental Oil Co.'s No. 1 Pipe Springs, Bent County, Colorado, was abandoned at 6,084 feet and one new completion was started in southwestern Colorado. Several major companies have leased up the Craig structure in Moffat County and probably will drill a test.

The Midwest Refining Co.'s No. 31 Pary, in Kane County, Utah, was abandoned at 4,440 feet after testing the Kaibab lime.

The Ohio Oil Co.'s black oil discovery on the Byron Dome, the opening up of a flow of 58,000,000 feet of gas in the Madison lime by the same company on the Garland Dome, and announcement of plans to build a pipe line from the black oil fields in the Big Horn Basin to Billings, Mont., were the principal developments in Wyoming. Noninflammable gas was found in the Tensleep in the Argo Oil Co.'s deep test at Mule Creek, a small pool in the Embar was found on the Pitchfork structure in Park County by the Producers & Refiners Corp. and another producer on the Dutton Creek structure in Carbon County was completed by the Midwest Refining Co.

NEW MEXICO

Hobbs Area—Lea County

The proration agreement in the Hobbs area is tenable on leases within four townships, these being Townships 18 and 19s, Ranges 37 and 38e, which it is believed will include the limits of the field. No wells are to be shot unless necessary; no oil is to be stored in the field; no well in the field is to be placed on an air or gas lift; and no well is to be operated in such a manner as to waste or dissipate the gas pressure of the field.

The three pipe line outlets for Hobbs are now running oil. The Shell Pipe Line Co.'s line to a connection with the Texas Pipe Line Co.'s line to Wink consists of 6-inch pipe; the Atlantic Pipe Line Co.'s line to Midland, Tex., is 8-inch and the Humble line to Monahan, Tex., is an 8-inch line. There is talk of other lines, but nothing definite has come out. The Midwest Refining Co., which is running about 3,700 bbls. a day under the proration agreement through the Atlantic's line, is studying the situation carefully and has had some discussions regarding the construction of an 8-inch line from Hobbs to Wink, Tex., and using the Southern Crude Oil Purchasing Co.'s steel storage, but this is still in the negotiation stage.

New Location

Sixteen locations were announced this week, the largest number in any one week since the field came in. These were as follows:

Tidal Oil Co.'s No. 2 Grimes, SW SE NE, Section 29-18-38, digging cellar. It is one-fourth of a mile north of its No. 1 Grimes, the biggest well in the field and the farthest out on the northeastern side. Same company's No. 1 Boone-Hardin, SW cor. NE, Section 19-18-38, digging cellar. Shell Petroleum Corp.'s No. 1 Grimes, SW cor., Section 28-18-38, location. Same corporation's No. 5 McKinley, NW cor. SE, Section 19-18-38, digging cellar. Same corporation's No. 6 McKinley, NE cor. SW, Section 19-18-38, digging cellar. Same corporation's No. 1-B State, NW cor., Section 33-18-38, location. Ohio Oil Co.'s No. 2 State, SE cor. SW, Section 30-18-38, location. Midwest Refining Co.'s No. 26 Terry, C SE SE, Section 9-19-38, cellar. Landreth Production Corp.'s No. 2-B State, 2,310 feet from north line and 1,320 feet from west line, NW, Section 33-18-38, building rig. Empire Gas & Fuel Co.'s No. 1 Boone-Hardin, SE cor. NW, Section 19-18-38, location. Same company's No. 2 Fowler, NW cor. NE, Section 31-18-38, digging cellar. Continental Oil Co.'s No. 2-A State, SE cor. SW, Section 29-18-38, cellar. Same company's No. 3-A State, NE NW SE, Section 29-18-38, location. Same company's No. 3-B State, 2,310 feet from south line and 1,320 feet from west line, SW, Section 33-18-38, location. Amerada Petroleum Corp.'s No. 1-B State, SW SE NW, Section 29-18-38, digging cellar. Same corporation's No. 2-B State, SE SW NE, Section 29-18-38, digging cellar.

Three wells are temporarily abandoned as a result of the proration agreement. These are George F. Getty, Inc.'s No. 3 McKinley, SE cor. NE, Section 30-18-38, on which operations were suspended at a total depth of 2,750 feet, one location east of its No. 2 McKinley, a producer; Humble Oil & Refining Co.'s No. 7 Bowers, SW cor. NW, Section 29-18-38, shut down at 2,750 feet; and the Humble's No. 6 Bowers, NE cor. SE, Section 30-18-38, shut down at 2,750 feet. Last named is in the same 40 as the Humble's No. 1 Bowers, the discovery well in that district.

The Tidal Oil Co.'s No. 1 Grimes, SW NE SE, Section 29-18-38, which was completed three weeks ago as a 20,000-bbl. well, the largest in the field, averaged 1,004 bbls. an hour on a three-hour test, or at the rate of 24,096 bbls. a day. The Gypsy Oil Co.'s No. 1 Grimes, NW cor., Section 32-18-38, the second largest which came in estimated at 16,000 bbls. a day, is flowing now at the rate of 18,000 bbls. a day.

Only One Completion

The only completion reported is George F. Getty, Inc.'s No. 2 McKinley, SW SE NE, Section 30-18-38, which made 353 bbls. the first 30 minutes from the pay at 4,020-4,202 feet. It is estimated at 17,000 bbls. of oil and 18,000,000 feet of gas the first 24 hours. The elevation is 3,655 feet. It topped the salt at 1,535 feet and bottomed it at 2,515 feet.

Routine drilling operations include the following:

Amerada Petroleum Corp.'s No. 1-A State, SW NW NE, Section 32-18-38, is drilling at 3,838 feet in lime, and its No. 3 McKinley, SW NW NW, Section 30-18-38, is drilling at 1,350 feet in red rock. Atlantic Production Co.'s No. 1 State, NE cor., Section 6-19-38, is drilling at 2,174 feet. It topped salt at 1,655 feet; elevation 3,633 feet.

The California Co.'s No. 1 Grimes, NW SE SE, Section 29-18-38, an offset on the south to the Tidal's No. 1 Grimes, cemented 7-inch at 3,970 feet. Same company's No. 2 State, NE SW SE, Section 29-18-38, is bottomed at 225 feet in the red beds and fishing for bit. Continental Oil Co.'s No. 1-A State, SE NW SE, Section 29-18-38, is drilling at 1,500 feet in anhydrite, and its No. 1-B State, C SW SW, Section 33-18-38, is drilling at 1,475 feet in anhydrite. Same company's No. 2-B State, NW cor. SW, Section 33-18-38, is rigging up rotary.

George F. Getty, Inc.'s No. 4 McKinley, NW cor. NE, Section 30-18-38, is drilling at 2,075 feet in salt and anhydrite. Top of salt was at 1,605 feet. Same firm's No. 5 McKinley, NE cor., Section 30-18-38, is still a location. Gypsy Oil Co.'s No. 2 Grimes, NE SE NW, Section 32-18-38, cemented 9⅝-inch at 2,752 feet, and its No. 3 Grimes, NE cor. SW, Section 32-18-38, is drilling at 800 feet in red rock. Same company's No. 4 Grimes, NE cor. NW, Section 32-18-38, is rigging up rotary, and its No. 5 Grimes, SW cor., Section 32-18-38, has rig completed.

Tools Recovered

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, is bottomed at 3,112 feet, has recovered tools and is cleaning out. Humble Oil & Refining Co.'s No. 2-A Bowers, NW cor. SE, Section 30-18-38, is drilling at 3,809 feet in lime, and its No. 3 Bowers, SW cor., Section 29-18-38, is drilling at 3,640 feet in anhydrite and lime. It had an oil and gas show at 3,613-14 feet. Same company's No. 4 Bowers, SE cor., Section 30-18-38, is drilling at 3,382 feet in anhydrite and lime. It had oil and gas at 3,161-66 feet and an increase at 3,286-97 feet, with considerable gas at 3,309-26 feet. Humble's No. 5 Bowers, NW NE SE, Section 30-18-38, is drilling at 3,072 feet in anhydrite and lime, and its No. 8 Bowers, SW cor. SE, Section 30-18-38, is drilling at 220 feet in red rock. It spudded on July 10. Humble's No. 9 Bowers, SE SW NW, Section 29-18-38, has skidded rig from 2,310 feet from the

(Continued on Page 192)

DRY GASSERS IN MARSHALL SAND AROUSE INTEREST IN MICHIGAN

By Paul A. Elliott

MUSKEGON, Mich., July 26.—Three Marshall formation dry gassers good for from 2,500,000 to as high as 6,000,000 feet a day initial production aroused the greatest interest in Michigan oil operations this week because of their location in the newly developing Leaton Pool of Denver Township, Isabella County, several miles northwest of the Mount Pleasant proven area. Attempts will be made to bradenhead each of the gassers and produce them from the Marshall while drilling them on into the oil production anticipated in the Dundee pay sands. Gas was struck between 1,250-75 feet in each of the three wells.

The Ohio Producing & Refining Co.'s No. 1 J. Epple, SE SW, Section 19-15n-3w, Denver Township, and the New York Petroleum Corp.'s No. 2 P. J. Marthey, SW SE, Section 19-15n-3w, also Denver Township, made 2,500,000 feet a day.

Gibson, Johnson & Borden, Inc., struck a flow of more than 6,000,000 feet a day in the Marshall formation in their No. 2 Lucius Cole, NE SW SW, Section 19-15n-3w.

The Isabella Oil Development Co.'s No. 2 Keeler-Mitchell well, SW NE, Section 10-14n-6w, Broomfield Township, also struck gas in a stray sand about 100 feet above the Marshall. This well is located about 6 miles due west of the city of Mount Pleasant and about 14 miles west of the proven field near No. 1 Mitchell which came in last December with an initial flow of about 10,000,000 feet in the Marshall. It made about 500,000 feet a day at 1,220 feet this week and will be carried on into the Marshall pay struck at about 1,325 feet in the No. 1 well.

Success in these and other wells in the vicinity of the Mount Pleasant Field in striking large flows of dry gas in the Marshall formation have aroused inerest in the possibilities for gas.

Mount Pleasant Field

The Pure Oil Co.'s No. 1 Sawade, NW SW SE, Section 2-14n-3w, Chippewa Township, Isabella County, was the only completion in the proven Mount Pleasant Field during the week. It made 300 bbls. initial daily production in the Dundee pay sands. Limestone was topped at 3,510 feet, pay at 3,544 feet and drilling was suspended at 3,580 feet, the total depth of the hole.

The Pure company's No. 9 J. Fox, SW SE NE, Section 13-14n-3w, also Chippewa Township, made about 100 bbls. initial in the upper Traverse pay sands struck at about 3,050 feet after the limestone had been topped at 2,908 feet. It will be drilled on to the Dundee and the well produced from both sands. It is an offset to the Pure-DePuy's No. 1 which made about 200 bbls. in the Traverse formation when it was brought in.

Muskegon

Three new oil wells and a small gasser were completed this week in the Muskegon oil field and one former upper Traverse oil producer has been abandoned.

All of the three oil wells as well as the gasser have comparatively small initial production in the lower Traverse or Dundee pay sands and all are located on the Muskegon River flats.

The largest of the new oil wells is the Cimusk Oil Co.'s No. 1 Paulson-Barlow-Heinz, SE NE, Section 8-10-16w, Muskegon Township, in which pay sands of the lower Traverse formation were struck at 1,888-92 feet. The well made 70 bbls. initial daily production at that depth.

The Lima Oil Corp.'s No. 8 Louis P. Haight, SW SW, Section 9-10n-16w, Muskegon Township, was another lower Traverse oil well shot at 1,850-82 feet and completed at 1,885 feet for a 32-bbl. initial producer.

The Lima corporation's old No. 1 Haight well, NE SW, Section 9-10n-16w, was deepened from an original upper Traverse oil well and completed as a 65,000-foot gasser in the lower Traverse, Gas was struck at 1,869 feet and the total depth of the well is 1,875 feet.

The United Gas & Oil Co.'s No. 1 John Cooper, depened from the lower Traverse to the Dundee, was brought in as an 18-bbl. oil well, topping the Dundee at 1,997 feet, and finishing at 2,009 feet.

The Reed Oil Co.'s No. 4 Torrent estate well, SE SW, Section 8-10n-16w, also on the river flats, has been abandoned and will be plugged at 1,640 feet.

Three other former oil producers in the Muskegon Field which are now being plugged and abandoned are as follows: Dixie Oil Co.'s No. 1 and No. 2 John Dirkes, NW NE, Section 9-10n-16w, Muskegon Township, near the east end of Daniloff Avenue in the field, and C. C. Mitchell and Joseph A. Mesiroff's No. 3 Pearl Norris well, SW NW, Section 7-10n-16w, Muskegon Township, on the Bear Creek flats north of North Muskegon.

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TIMKEN *Tapered Roller* BEARINGS

New Wells Completed in Elwood Field

Tideland Development Activity Gaining Momentum. Town Lot Work at Playa Del Rey May Not Pay Out

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., July 26.—The Barnsdall, Rio Grande, Pacific Western Oil Co. and the Signal Oil & Gas Co. celebrated the second anniversary of the Elwood Field in a fitting manner this week by completing new wells which showed an aggregate initial daily production of 6,540 bbls. The discovery well, No. 1 Luton Bell of the Barnsdall and Rio Grande, was officially completed on July 27, 1928, flowed 2,500 bbls. per day from 3,208 feet. Since this time 40 wells have been successfully finished at Elwood, notwithstanding that development work has been retarded in the interest of conservation. The Barnsdall and Rio Grande have brought in 17 wells on the Luton Bell lease, 5 on the Doty, 2 on State tideland permit No. 88 and 1 on State tideland permit No. 94, making a total of 25 successful completions. The Pacific Western Oil Co. has finished four producing wells on State tideland permit No. 92 and one on the Golta lease, while the Bankline Oil Co. has completed three producers on State tideland permit No. 89. The Elwood Exploration Co., a subsidiary of the Honolulu Consolidated Oil Co., has brought in four producing wells on State tideland permit No. 90, the Seaward Oil Co. one on Permit No. 91, Caroline Spalding one on State permit No. 93, and the Signal Oil & Gas Co. one on State tideland permit No. 98.

Large Production

Up to the close of June, 1930, the Elwood Field of Santa Barbara County has yielded 17,922,344 bbls. of crude oil since its discovery by the Barnsdall and Rio Grande in July, 1928. This represents an average total production of 512,067 bbls. per well on the basis of 35 successful producers finished on or before June 30 of the current year. From an acreage standpoint, the prolific Elwood Field has averaged 35,845 bbls. per acre on the basis of 500 acres proven productive up to the present time. This recovery per acre would obviously be substantially higher if the total 500 acres were fully developed. The Barnsdall and Rio Grande have shifted the center of operations from the Luton Bell and Doty leases, located inside the tideline, to state tideland permits because this submerged acreage adjoins similar holdings of other companies which are being drilled. This necessary offsetting work on state tideland permits located out in the open ocean leaves the Barnsdall and Rio Grande free to reserve the land acreage until a later date, as it is not susceptible to drainage because these joint tenants control all of the productive acreage located on the land side of the field. The Barnsdall and Rio Grande have produced a total of 14,451,435 bbls. in the Elwood Field up to the close of June, 1930, out of a total field recovery to date of 17,922,344 bbls. Of this, the Luton Bell lease has produced 9,775,902 bbls., the Doty lease, 3,564,757 bbls., and State tideland permits Nos. 88 and 94, a total of 827,857 bbls. and 282,919 bbls., respectively.

During the past week the Pacific Western Oil Co. finished well No. 5 on State tideland permit No. 92 flowing 3,520 bbls. per day from 3,474 feet. This new well blew in with a tremendous kick and will probably do a much higher production upon conclusion of the five-day flow test permitted under the existing curtailment agreement. Two additional wells have been started on this lease and they should be on production some time in October. The Barnsdall and Rio Grande, jointly operating the Luton Bell and several state tideland leases, successfully completed No. 13 Luton Bell this week flowing 2,160 bbls. initially from 3,480 feet. The Signal Oil & Gas Co. successfully finished well No. 2 on State tideland permit No. 98 early in the week flowing 860 bbls. of exceptionally clean 34.9 gravity oil per day from 3,686 feet. The completion of this new well extends the proven limits of the Elwood Field approximately 1,000 feet and incidentally proves up the western part of Caroline Spalding's Blue Goose tideland permit No. 93.

T'deland Development

The next several months will be devoted to development of state tideland permits almost exclusively, because of normal competitive drilling and the substantial production secured. In order to carry out this work it will be necessary for operators to construct several thousand feet of new drilling piers. The Signal Oil & Gas Co., which finished a new well in the extreme western part of the Elwood Field during the past week, has completed tentative arrangements to extend the length of its present 1,400-foot pier an additional 1,200 feet out into the ocean. The Pacific Western Oil Co., which recently completed well No. 5 on State tideland permit No. 92, is also expected to augment its present pier as this new well is located 1,100 feet out from the shore line and is at present working on another project located 1,400 feet beyond the tideline. Eventually the company will extend its main pier out beyond 3,000 feet if practicable. The Elwood Exploration Co. has been granted permission by the United States War Department to extend its present pier and it is quite likely that the Barnsdall and Rio Grande will also lengthen its present drilling facilities.

Playa Del Rey

Two new wells were finished in the Playa Del Rey Field of Los Angeles Basin this week, both being completed in the deep Recreation zone. The George F. Getty Co. successfully brought in No. 1 Venice flowing 2,350 bbls. of 23.9 gravity oil per day from 6,205 feet and the Superior Oil Co. finished No. 1 Moses doing 1,450 bbls. initially from 5,640 feet. The latter well is especially interesting because of the relatively shallow depth at which it was completed. The conglomerate was topped in this well at 5,566 feet and the Schist encountered at 5,611 feet. In the Getty company's No. 1 Venice the conglomerate was logged at 6,102 feet and the Schist picked up at 6,134 feet. The Union Oil Co.'s No. 1 Del Rey, finished 10 days ago, is still holding up in good shape, current production from the upper zone at 4,014 feet approximating 475 bbls. daily.

Several new drilling projects got under way in this field during the past week and a number of others are scheduled for early spud. It is the general consensus of opinion that Playa Del Rey is going to cause operators considerable anxiety from a financial standpoint before the present development program is brought to a close. Early completions in this town lot area will probably pay out but late completions will not be so fortunate because of the drainage factor. The situation in this field is unique in that operators are all shooting for one productive horizon which is extremely limited in thickness of oil-bearing formation. In addition to this unfavorable factor, the gas oil ratio is rather low, although the natural gasoline content averages a little better than three gallons for each 1,000 feet of natural gas treated.

Town Lot Development

It is rather difficult to determine the basis upon which operators predicate or justify town lot development in this field because the capacity of the reservoir is not sufficient to warrant the hazards involved. The Union Oil Co. and Ohio Oil Co. are staking their chances on acreage in contrast with the operations of operators drilling on town lots. The holdings of the Union and Ohio appear to be located on the crest of the structure and should therefore pay out. In the congested subdivided section of the field, however, the drainage factor will mitigate against economic production. If the Playa Del Rey Field runs true to precedent more money will be expended in development work than will be recovered from production of oil and gas. The Los Cerritos town lot section of the Long Beach Field, with a far greater thickness of oil sand, failed to yield sufficient production to justify competitive drilling and consequently resulted in substantial losses to operators. Another $5,000,000 was lost in town lot development at Lawndale and additional substantial losses will probably result from development work in the Potrero Field. The Santa Barbara Mesa proved another treacherous field due to insufficient thickness of oil sand to sustain commercial production. It is significant to note that major companies with large staffs of geologists and petroleum engineers have refrained from entering the Playa Del Rey Field because of the improbability of developing sufficient production to justify drilling operations. It is the writer's personal opinion that the Playa Del Rey Field, exclusive of the holdings of the Union, Ohio, Barnsdall and possibly one or two other properties, will prove a distinct flop notwithstanding that aggregate field production will reach a substantially higher level than current production. The existence of Schist immediately underlying the deep Recreation zone precludes the possibility of opening up any additional productive horizons. When the Recreation zone is depleted the story is ended because the basement complex has been reached. During the course of the next 60 or 90 days it is quite probable that several substantial producers may be finished but it is doubtful if the total ultimate production at Playa Del Rey, exclusive of the properties named above, will prove sufficient to liquidate the combined drilling costs. Wells in this field cost approximately $75,000 to drill into completion in the deep Recreation zone located around the 6,000-foot level. In order to liquidate drilling costs and return the operator a profit, each and every well must produce at least 100,000 bbls. during its life, even with this crude commanding $1 per barrel If five wells are drilled to the acre, each acre must produce 500,000 bbls. of crude oil and natural gas to show operators a profit. A 100-foot oil zone, such as exists at Playa Del Rey, cannot yield anywhere near this amount. The result is quite obvious to production men who, by estimating the sand porosity, degree of saturation, thickness of sand and possible amount of recoverable production, can determine the hazards involved. It is interesting to note that many experienced oil men have refrained from engaging in drilling operations at Playa Del Rey. Their hesitancy to drill in this field has naturally reduced the number of wells which would ordinarily be drilled in a town lot area with the result that any losses sustained will be considerably smaller than would have occurred if promiscuous drilling was undertaken.

Santa Fe Springs

The General Petroleum finished one new well and recompleted another in the Santa Fe Springs Field during the past week. The company's new acquisition to its list of producers was No. 219 Santa Fe, which was brought in flowing 510 bbls. of 30.9 gravity oil per day from 7,130 feet. No. 239 Santa Fe was recompleted doing 248 bbls. per day from 5,970 feet. Two other recompletions were chalked up in this field during the week, one of which, No. 1-A Peterson of the Wilshire Oil Co., was returned to production doing 140 bbls. of 30.6 gravity oil per day after being plugged back from 7,440 feet to 5,215 feet. The Texas Company recompleted No. 5 Standlee doing 200 bbls. from 7,870 feet. Drilling operations in the Santa Fe Springs Field have become almost a negligible factor and within a short time the only work done in this field will consist of reconditioning operations.

The Barnsdall has spudded in No. 2 Trust in the Rosecrans Field of Los Angeles basin and the outcome of work on this well will be watched with interest because of the substantial production shown by No. 1 Trust which the Barnsdall drilled after the property had been quitclaimed as unproductive by another

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily average	Total last week	Daily average	This week to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	644,320
Fuel oil	.....	.....	.....	.....	71,950	49,950
Diesel and gas oil	168,133	24,019	.....	.....	2,152,322	913,200
Gasoline	577,375	82,482	458,788	65,541	10,982,317	11,365,836
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	292,076	41,725	409,672	58,525	8,569,554	13,270,522
Fuel oil	301,243	43,035	404,700	57,814	9,473,091	11,794,446
Diesel and gas oil	7,864	1,123	17,561	2,509	1,048,553	734,628
Gasoline	158,615	22,659	264,596	37,799	6,689,219	5,892,645
Kerosene	.....	.....	5,782	826	102,604	37,157
Exports—						
Crude oil	49,206	7,029	85,729	12,247	3,681,309	2,938,644
Fuel oil	357,023	51,003	274,303	39,187	10,442,949	10,653,290
Diesel and gas oil	137,302	19,615	16,980	2,426	2,617,531	1,465,159
Gasoline	397,664	56,809	163,944	23,421	9,058,890	5,923,086
Kerosene	.....	.....	65,709	9,387	2,112,640	1,629,108
Lubricants	.....	.....	.....	.....	10,082	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	47,680	6,811	.....	.....	135,960	.....
Gasoline	77,312	11,045	64,375	9,196	783,367	1,189,377
Lubricants	.....	.....	10,910	1,559	16,776	69,172
Coastwise—						
Fuel oil	124,260	17,751	44,091	6,299	2,056,637	1,602,343
Diesel and gas oil	8,751	1,250	7,870	1,124	169,165	326,235
Gasoline	79,850	11,407	16,127	2,304	2,243,505	2,760,175
Kerosene	5,151	734	.....	.....	142,044	85,406
Exports—						
Crude oil	.....	.....	.....	.....	3,075	121,603
Fuel oil	48,110	6,873	.....	.....	529,110	395,731
Diesel and gas oil	1,550	221	.....	.....	239,054	155,474
Gasoline	34,780	4,969	.....	.....	2,288,964	3,100,079
Kerosene	.....	.....	.....	.....	380,083	382,417
Lubricants	.....	.....	.....	.....	18,672	21,899

operator. The Standard has finished No. 47 Emery, a new well in the West Coyote Field, pumping 315 bbls. of 29.3 gravity oil daily from 4,380 feet, the hole having been finished with an 8⅝-inch oil string carrying 400 feet of perforated. The Standard has three other wells under way in this field on the Murphy Coyote lease which should be completed in the near future. One of these projects, No. 105, is being drilled with oil instead of the usual rotary drilling mud. In the Huntington Beach Field, the Barnsdall has abandoned No. 1 Huntington Syndicate as a duster at 6,723 feet. This well, located in the extreme southeastern end of the field, failed to show sufficient oil sand to justify the expectation of developing commercial production. The Vaqueros Major Oil Co. is completing tentative plans to develop Tideland permit No. 194, which the company validated several months ago. In order to drill on this submerged lease, the company will be obliged to construct a 200-foot pier out into the open ocean. The Richfield Oil Co. is expected to test out No. 1 Coffin, a deep test in the Potrero town lot section, some time within the next week or 10 days. This well is the most important drilling project in the Potrero Field at the present time because if commercial production is developed it will open up a new zone for production. There were no new wells chalked up in the Long Beach Field during the week, although several are being prepared for early production tests.

Midway-Sunset

Drilling operations in the Midway-Sunset Field of Kern County have shown a very substantial decline during the past several months and will probably show a further drop during the next several months due to completion of drilling obligations in the Maricopa Flats and also because of the decline in production shown by that area. The Shell recompleted No. 1 Olcese in the Round Mountain Field of Kern County pumping 115 bbls. per day after cleaning out the hole to bottom, 2,240 feet. The Honolulu Consolidated logged the top of the Vedder zone in its well No. 99 in Section 18-28-29 at 2,274 feet and this project should be completed in the near future. There was only one well drilling in the Mount Poso Field at the end of the past week. This was No. 32 Heisen of the General Petroleum, a recent spud in Section 16-27-28.

The Shell put No. 55 Taylor, a recent completion in the Ventura Avenue Field, on gas lift a few days ago and it is flowing 355 bbls. per day from 4,016 feet.

(Continued on Page 187)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	5,050	br. sh. drilling
Universal Consd., No. 1 Pt. Conception, Santa Barbara Co.	30- 5-34	4,000	redrilling
Prairie Oil Co., No. 1 Lompoc, Santa Barbara Co.	15- 7-35	4,170	sd. sh. drilling
Fields Gasoline Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	3,704	cleaning out
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	2,312	sd. sh. drilling
Deuel Pet. Co., No. 1 Santa Ynez, Santa Barbara Co.	9- 7-30	3,130	suspended
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	2,880	suspended
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	31- 4-28	4,350	suspended
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	....	location
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	cemented
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
Ring Oil Co., No. 1 Goleta, Santa Barbara Co.	16- 4-28	4,840	sd. sh. drilling
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	850	sd. sh. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	285	sd. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	4,701	sd. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	4,190	hd. sd. drilling
Standard, No. 2 Casitas, Santa Barbara Co.	26- 4-25	1,200	sd. sh. drilling
Continental, Tideland permit No. 121, Santa Barbara Co.	33- 4-25	1,085	suspended
Continental, Tideland permit No. 122, Santa Barbara Co.	33- 4-25	1,020	suspended
Continental, Tideland permit No. 123, Santa Barbara Co.	33- 4-25	1,020	suspended
Continental, Tideland permit No. 124-A, Santa Barbara Co.	33- 4-25	418	suspended
Continental, Tideland permit No. 125, Santa Barbara Co.	33- 4-25	1,455	suspended
Continental, Tideland permit No. 126, Santa Barbara Co.	33- 4-25	1,034	suspended
Continental, Tideland permit No. 127, Santa Barbara Co.	33- 4-25	1,055	suspended
Continental, Tideland permit No. 128, Santa Barbara Co.	33- 4-25	1,054	suspended
Continental, Tideland permit No. 129, Santa Barbara Co.	33- 4-25	1,020	suspended
Exeter Oil Co., Tideland permit No. 163, Santa Barbara	32- 4-25	76	suspended
Getty, George F., No. 120 Carpinteria, Santa Barbara Co.	32- 4-25	1,024	suspended
Getty, George F., No. 130 Carpinteria, Santa Barbara Co.	32- 4-25	1,029	suspended
Shell, No. 5 Oxnard, Ventura Co.	14- 2-20	2,411	sd. sh. drilling
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,529	may abandon
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	6,490	sd. sh. drilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	2,450	oil sand
Fennell, E. A., No. 1 Lankershim, Ventura Co.	13- 4-19	1,791	suspended
General Pet., No. 1 Fillmore, Ventura Co.	6- 3-19	2,760	sd. sh. drilling
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	fishing
Camarillo Synd., No. 1 Camarillo, Ventura Co.	33- 2-20	455	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	1,095	sd. sh. drilling
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	2,706	suspended
Millham Explts., No. 9 Buttonwillow, Kern Co.	8-28-23	4,990	suspended
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	2,570	sd. sh. drilling
Shell, No. 1 Lerdo, Kern Co.	23-28-26	4,612	sd. sh. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	4,965	oil sand
Shell, No. 1 Edison, Kern Co.	33-29-29	5,625	abandoning
Petroleum Securities, No. 1 Edison, Kern Co.	14-29-29	1,100	hd. sd. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	cleaning out
Elmer Oil Co., No. 1 Tejon, Kern Co.	15-30-30	4,695	hd. sd. drilling
Hancock Oil Co., No. 1 Jasmine, Kern Co.	23-25-27	2,665	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	4,249	redrilling
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	505	hd. sd. drilling
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,181	br. sh. drilling
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	3,094	sd. sh. drilling
Stabler, W. W., No. 1 Commanche Pt., Kern Co.	4-11-18	1,670	sd. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	450	sd. sh. drilling
Wrenn, J., No. 1 Antelope Plains, Kern Co.	32-25-17	645	sd. sh. drilling
Hannon, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,619	suspended
Richfield, No. 1 Kreyenhagen, Fresno Co.	33-22-16	2,190	hd. sd. drilling
Ohio Oil Co., No. 1 Coalinga, Fresno Co.	8-21-15	418	sd. drilling
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,390	suspended
Fresno Madera Oil Co., No. 1 Clovis, Fresno Co.	18-22-21	4,470	suspended
Panorama Oil Co., well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Libby Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,485	gr. sd. drilling
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,941	cleaning out
Union, No. 1 King City, Monterey Co.	8-22- 8	3,250	suspended
Standard, No. 1 King City, Monterey Co.	23-22- 7	4,694	hd. sd. drilling
Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co.	19-23-15	181	suspended
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	4,310	fishing
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	3,880	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, San Joaquin Co.	3- 2-10	3,535	suspended
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	595	sd. sh. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,022	recemented
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	918	recemented
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	865	sd. sh. drilling
Consolidated Properties, Ltd., No. 1 Porterville, Tulare Co.	35-22-27	mtl.	building rig
Terra Bella Drlg. Co., No. 1 Porterville, Tulare Co.	34-22-17	mtl.	building rig
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	670	hd. sd. drilling

STRIKE ON MOOSE DOME STRUCTURE NORTHWEST OF TURNER VALLEY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, July 26.—A strike that may prove of some importance is unofficially reported from the Moose Dome structure, northwest of Turner Valley, where Moose Dome Oils' No. 1, LSD 16, Section 29-22-6w5, blew in with a wet gas production estimated at 10,000,000 feet. Production came from the Devonian lime at 2,789 feet, the heavy flow and pressure lifting the tools in the hole, and temporarily halting drilling operations. As an emergency measure the gas was run through a 6-inch pipe and burned some distance from the derrick. Later the flow either froze or pinched down to about 1,000,000 feet and drilling was resumed. This is the second test in Alberta to drill in the Devonian formation, and the first to get any considerable production. If freezing actually occurred, this is the first example of that phenomenon in the Alberta fields outside the Madison limestone horizon.

Imperial Drilling

Among the Imperial Oil, Ltd.'s tests in South Turner Valley, interest centers in Home Oil Co.'s No. 5, LSD 7, Section 20-19-2w5. This test is drilling 261 feet in the lime at 2,741-foot depth, nearly 100 feet below the normal big production horizon encountered in the earlier Home producers.

In Section 17-19-2w5, Lowery Petroleum's No. 2 is rigging up in central Turner Valley. Royalite's No. 25, N half, Section 31-19-2w5, is rigging up.

In South Turner Valley, Wellington Oils' No. 1, LSD 1, Section 20-19-2w5, which has been making around 160 bbls. a day with tools in the hole, has hooked up a second separator to increase production. In the same section, Calmont Oils' No. 2, LSD 11, is reported showing increased recovery following installation of a separator with increased back pressure.

Conley Oils, Ltd. has located its No. 1 test on acreage of Texalta Oils, Ltd. in LSD 4, Section 21-19-2w5, east of the Home acreage. The contract calls for drilling before August 1.

In Section 1-20-3w5, Central Turner Valley, Calmont Oils' No. 1, LSD 2, is reported drilling 273 feet in the lime at 5,728 feet and shows a little wet gas.

Following the big strike in Royalite Oil Co.'s No. 11, which got a wet gas flow, estimated 35,000,000 feet, in the lime, Widney Petroleum's No. 1, LSD 11, Section 12-20-3w5, is pulling tubing preparatory to deepening. The well last fall got a good production of light crude in the McDougall sand, making more than 17,000 bbls. since last October. The well is fairly close to Royalite's No. 11 deep producer, and will be carried to the same horizon.

Annual meeting of shareholders of Model Oils, Ltd. was held recently at Calgary, when the following directors were re-elected: President, W. R. MacArthur; vice president, Frank R. Proby; secretary-treasurer, Thomas W. McKee; managing director, William C. Fisher; directors, W. Grant Mackay, Chester W. Barber and Harry Groves.

Red Coulee Field

On the Montana end of the Red Coulee structure, Ohio Oil Co.'s No. 2, one of the farthest west wells, reports a gas flow between 2,000,000 and 3,000,000 feet from 2,500 feet and is deepening for oil. Nellie-Jane-Farbo's No. 1, a quarter mile farther west, a spudded in and is drilling at 300 feet. Ohio's No. 1, SW Section 2-37-4w, is reported flowing 10 bbls. Alberta Pacific's No. 1 Singleton, offsetting Hannah Porter's No. 1 producer, is reported drilling at 500 feet.

Adanac Oil & Gas Co.'s No. 1, NE Section 12-37-4w, has cemented 8-inch at 2,250 feet and is pulling 10-inch. This company is planning a series of eight tests in this lease.

Monalta Oil Co.'s No. 1 Buckley, which is producing from a stray sand at 2,473 feet, will be deepened about 45 feet to the Ellis. The original Monalta wildcat, drilled near Sweetgrass some years ago, was listed as No. 1, and the present No. 1 Buckley producer was listed as No. 2; but the company has adopted the changed enumeration.

On the Alberta end of the Red Coulee structure, Southern Alberta Exploration's No. 1, LSD 8, Section 3-1-16w4, is reported producing steadily.

Border Fields

In the Skiff Field, southern Alberta, Devenish Petroleums' No. 4, LSD 13, Section 29-5-14w4, is drilling close to 2,900 feet with gas show, and checking higher than Devenish's No. 3. Production is looked for around 3,030 feet.

On the Spring Coulee structure, Alberta Pacific Consolidated's No. 1, Section 15-4-23w4, is drilling below 2,000 feet without a show.

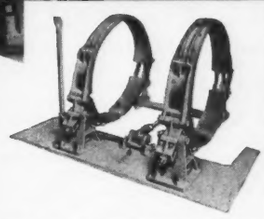
In the Milk River district, Commonwealth Petroleum's No. 1, LSD 9, Section 9-3-15w4, is drilling in the Devonian at 4,310 feet with some gas. Capitol Oil & Gas Co.'s No. 1-A, LSD 16, Section 32-1-12w4, is at 3,505 feet after

(Continued on Page 187)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Union, No. 1 Orchard Dale, Los Angeles Co.	10- 3-11	2,950	sd. sh. drilling
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	4,395	sd. sh. drilling
Crimson Pet., No. 1 Compton, Los Angeles Co.	22- 3-13	130	suspended
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	suspended
Ohio, No. 1 Moneta, Los Angeles Co.	35- 3-14	6,975	hd. sd. drilling
Guajome Oil Co., No. 1 El Nido, Los Angeles Co.	33- 3-14	rig	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,200	sd. sh. drilling
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	13- 3-14	4,450	sd. sh. drilling
Tri-State Oil Co., No. 1 Watts, Los Angeles Co.	12- 3-14	3,430	sd. sh. drilling
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	5,860	gr. sd. drilling
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	3,820	sd. sh. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	2,444	oil sand
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	3,660	suspended
Bardeen Pet., No. 1 Puente, Los Angeles Co.	9- 2-10	2,115	hd. sd. drilling
Sherman, J. W., No. 1 Puente, Los Angeles Co.	33- 2- 8	850	suspended
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	2,548	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,950	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,575	gr. sd. drilling
Union, No. 1 Coyote, Sansinena, Los Angeles Co.	30- 2-10	4,000	br. sh. drilling
Tureco Oil Co., No. 1 Whittier, Los Angeles Co.	29- 2-11	5,510	sd. sh. drilling
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	28- 2- 9	6,250	hd. sd. drilling
Lamona Oil Co., No. 1 Pomona, Los Angeles Co.	34- 1- 9	690	hd. sd. drilling
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	5,470	sd. sh. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	1,260	sd. sh. drilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., No. 1 Brawley, Imperial Co.	32-11-10	3,000	hd. sd. drilling
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	cleaning out
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,420	hd. sd. drilling
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	2,410	gr. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	fishing
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	1,549	cleaning out

BETTER BRAKES!



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CONTINENTAL

Kenton Most Active in Old Lima Area

Half Dozen Completions Expected Within the Week. Central Ohio Field Has 35 New Operations Under Way

By Whit

Staff Correspondent, Central West Fields

FINDLAY, Ohio, July 28.—The only division of the Central West that shows any activity at this time is Central Ohio which maintains drilling operations almost the year around, owing to the gas producing areas as well as the oil sections.

The old Lima Field of northwestern Ohio shows but one spot that has any activity and that is near Kenton, in Cessna Township, Hardin County, to the south of the older defined Trenton Rock Field. In this county work is under way in Cessna, Washington, Pleasants and Blanchard Townships, where a dozen wells are under way and others starting. The test well of Eagan and White of Akron, Ohio, on the Oscar E. Steiner farm, Section 12, Cessna Township, Hardin County, about 4 miles west of Kenton, showed 500,000 feet, and a showing of oil and may yet be developed into a commercial oil well. Top of Trenton in this hole was found at 1,377 feet and drilled 51 feet into a total depth of 1,428 feet. The Kemrow Co.'s test on the Tudor farm, Section 23, same township, has a nice gas showing and at last report was still drilling with 600 feet of fluid in the hole. The next week or so should show at least a half dozen wells completed in the new Kenton Field, in Hardin County. Kemrow Co. has started a test on the W. B. Howard farm, Section 35, Washington Township, same county. Jupiter Oil Co. is drilling on the George A. Matthews 122 acres, Section 18, Pleasants Township, same county, and the Blanchard Oil & Gas Co. is starting a test on the Phil Kirt farm, Section 1, Blanchard Township, same county.

O'Neil Brothers are starting a test on the Perin farm, in Shelby County.

Nineteen completions are reported from the Central Ohio Field, of which 5 were oil wells with an initial production of 406 bbls., 4 dry holes and 10 gas wells. In new work starting, there were 21 new locations made and 14 wells started spudding, a total in new work of 35.

In Ashland County, Orange Township, the Kemrow Co.'s second test on the James Fluke farm, Section 22, is a dry hole. Ohio Fuel Gas Co. has a gas well in No. 1-5,148 John L. Smith farm, Section 1, Montgomery Township. In Lake Township, Robinson and others' No. 4 W. S. Wolf, Section 16, was dry in the Berea sand from 672-76 feet, and No. 5, same farm, is drilling. Gold Crown Oil & Gas Co. has a light gas well in No. 3 on the Harry Horn farm, Section 21, same township, from 618-91 feet.

In Wayne County, Congress Township, Harmon & George are drilling No. 3 Clayton Good, Section 36, while Hulse & Kundtz are starting No. 1 William Lewis farm, Section 19, Chester Township.

Holmes County is credited with a 100-bbl. initial producer from 3,453-93 feet in No. 5 on the S. H. Sterling farm, Lot 27, Hardy Township, and owned by the East Ohio Gas Co. Ohio Fuel Gas Co.'s No. 1-5,120 Emanuel White farm, Lot 15, Richland Township, same county, is reported a dry hole.

In Cuyahoga County, Almstead Township, the Ohio Fuel Gas Co. has a gas well in No. 1,5112 George W. Walkden farm, Lot 3.

In Knox County, Brown Township, Ohio Fuel Gas Co.'s No. 3-5,168 J. J. Hyatt farm, Lots 3, 4 and 6, is a gas well. Harvey G. Hammond is drilling No. 7 H. G. Hammond farm, Section 23, Union Township, same county.

Summitt County

Summitt County has one completion made by F. A. Brendall and others in No. 3 William H. Habel, Section 25, Franklin Township, it is a fair gas well at from 4,135-55 feet.

In Licking County several wells are nearing where the pay should be found. Emerald Petroleum Co. is drilling No. 1 Charles A. Weekly, Section 13, Fallsbury Township, and Murphy and others are drilling No. 1 Eli Clark, same section. McCray Brothers are drilling No. 5 Emmet Hoover, Section 3, Perry Township, same county.

Muskingum, one of the active developing counties in the central Ohio area, has another good well in the Hopewell Gas & Fuel Co.'s No. 4 James M. Sidle, Section 5, with an initial of 125 bbls. from 3,226-78 feet, and No. 5, same farm, is drilling. The Atha Co.'s No. 4 L. M. Bryan farm, Section 20, Perry Township, is reported with an initial of 15 bbls. from 3,180 feet. Same company's test on the J. K. Pitts, Section 17, Union Township, same county, is a fair gas well. In this well top of the Lime was found at 3,210 feet, gas from 4,610-14 feet, total depth, 4,692 feet. Wehrle Co. has a light gas well in No. 1 on the John McCloud heirs, Sections 5 and 6, same township, from a total depth of 4,320 feet.

In Athens County, Ames Township, the Ohio Fuel Gas Co.'s No. 1-5,185 Thomas J. White farm, Section 2, is a light gas well in the Berea sand from 1,563-83 feet, total depth 1,591 feet. Carpenter & Glatis, fractional Section 33, Berne Township, same county.

Tuscarawas County comes forward with a nice producer, drilled by the Capitol zier are drilling No. 9 H. D. & C. C. Cur-Drilling Co., in No. 3 Lewis Little farm, Lot 132, Washington Township, which showed an initial of 136 bbls. and a fair gas volume at a total depth of 3,724 feet.

Stark County

In Stark County, Lawrence Township, the Penn Oil & Gas Co. has a nice gas well in No. 1 R. L. Baughman farm, Section 3, from 3,914-57 feet.

In Fairfield County, Ohio Fuel Gas Co.'s No. 3-5,242 Edward Eyman, Lot 1, Rush Creek Township, is a light gas producer in the Berea from 793-94 feet.

In Guernsey County, Wheeling Township, the East Ohio Gas Co.'s No. 9 C. and A. Gray farm, Section 13, produced 30 bbls. natural from a depth of 3,586 feet.

In Belmont County, Union Township, Frank Stranges and others' No. 8, on the Shepherd-Wilson property, Sections 21 and 27, was dry at 2,060 feet.

In Morgan County, Penn Township, the Ohio Fuel Gas Co. has a light gas well in No. 1-5,197 H. R. Greathouse farm, Section 16, at a depth of 1,569 feet. Malta Oil & Gas Co. has a very light gas well in No. 63 on the J. W. Davis farm, Section 24, Union Township, same county, at a total depth of 330 feet. Coal in this well was found from 310-15 feet.

In Perry County, Monroe Township, Marshall Brothers' No. 3 Newberry-Denman farm, Section 13, produced 3 bbls. initial from 1,139-60 feet. Allegheny Oil Co.'s No. 5 William G. Longstreth farm, Section 32, Pleasants Township, same county, produced 5 bbls. initial from 1,103-23 feet.

In Hocking County, Benton Township, Ohio Fuel Gas Co.'s No. 1-5,162 Enid Wolf farm, Section 9, is a gas well, and Edington & Schooley's No. 2 E. E. Schooley, Section 35, Salt Creek Township, was dry from 488-500 feet.

In Monroe County, Malaga Township, Roy Becker and others' No. 7 B. P. Ackerman, Section 28, is a light gas well at 1,080 feet. Shaffer Farm Oil & Gas Co.'s No. 1 William Martin farm, Section 11, Bethel Township, reported at 2 bbls. from 1,692 feet. Local Oil Co.'s No. 1 Bert Mallett, Section 10, Franklin Township, is a very light gas well at 1,710 feet, and the Wittmer Properties, trustee's No. 1 George Kernen, in Salem Township, was dry at 2,172 feet. Preston Oil Co.'s No. 1 S. E. Mericle, Section 2, Franklin Township, is a gas well.

In Noble County, Schafflin Co.'s No. 10 F. L. Ullman, Section 32, Elk Township, was dry, salt water being found at 752 feet.

INDIANA

But two completions have been reported from the Indiana Fields although there are quite a number of wells about due in the extreme southern part of the State in Perry and Spencer Counties as well as in different areas of the Princeton Field.

C. E. Wommer's test in the northeast corner of the Edward Scales farm in the NE, Section 30, Washington Township, Pike County, is a dry hole at a depth of 440 feet. In the same township, Charles C. Talliaferro, Jr., drilled a gas well reported showing 1,000,000 feet in a second test in the northwest corner of the Lee George farm, NW, Section 20, at a depth from 1,046-1,127 feet.

The second well recently drilled by the Texana Oil Co. on the S. M. McCullough farm, Section 10, Barton Township, Gibson County, that showed an initial of 60 bbls., should be an inducement for further operations in that part of the field. Then another area is around the vicinity of the Big Four Oil & Gas Co.'s No. 4 on the C. T. Sloan farm. Section 18, Washington Township, Gibson County, that produced naturally 55 bbls. in 24 hours from 1,257-62 feet.

ILLINOIS

A few completions are reported from various parts of the Illinois Fields. In

(Continued on Page 260)

FURTHER SHUTDOWN CONTEMPLATED IN WESTERN KENTUCKY FIELDS

By Whit

OWENSBORO, Ky., July 28.—Indications are for a further shutdown in the western Kentucky fields in hopes of staving off a decline in crude prices. The Owensboro Messenger says: "Notice was given to operators in the Owensboro Field by W. F. McCray, manager for the Illinois Pipe Line Co., owned and operated by the Ohio Oil Co., that it had become necessary to curtail operations here for the present, or a cut in the price of oil was imminent. At the present time this field is producing 15,000 bbls. of crude oil per day. The oil is purchased chiefly by the Ohio Oil Co., which in turn sells to refineries. The Producers Pipe Line Co., owned largely by James C. Ellis of Owensboro, Fred Miles of Louisville, Dr. L. C. Young and others, buys and transports around 3,500 bbls. per day. This is barged to Louisville, where it is sold to refineries.

"Crude oil of the western Kentucky brand is bringing $1.53 the barrel at this time, and a cut in this is probable should the situation become worse, it was indicated. Charles E. Curry, president of the Kentucky Oil Men's Association, called a meeting of the operators to decide just what they wish to do in the matter.

Ohio County

Cumberland Petroleum Co.'s No. 2 well, 400 feet from the north line and 1,800 feet from the east line of the Dave Brooks 120 acres, in the Haynesville Field in Ohio County, produced an initial of 75 bbls. T. P. Royal and others' No. 16 T. P. Royal 60 acres, in the Friendship Church Pool, reported at 60 bbls. initial.

Louisville Gas & Electric Co.'s No. 9 on the R. A. Miller 175 acres, in the Haynesville Field, produced 20 bbls. the first 24 hours. No. 10, same farm, is drilling. In the same field the Petroleum Exploration Co.'s No. 1 in the SE cor. of the W. E. Crowe farm, same field, produced 15 bbls. initial.

In the Cane Run area, Marion French and others' test on the Ambrose farm reported showing 50 bbls. initial. Penn-Indiana Oil Co.'s No. 19, on the C. A. Kelley 260 acres, in the Deanfield Pool, proved a dry hole at 714 feet. James C. Ellis and others' No. 11 W. P. Howard farm, in the Howard Pool, pumped 5 bbls. from the Stray sand at 430 feet.

J. E. Hare and others' No. 1 A. D. Kirk farm produced an initial of 25 bbls. from the Barlow sand at 715 feet. First National Bank Co.'s No. 11 on the Mary J. Brown 150 acres, in the Deanfield area, pumped 10 bbls. in 24 hours at 700 feet.

Daviess County

Two nice wells have been found in the Habit area of Daviess County by the Johnson Oil & Refining Co. in Nos. 2 and 3 H. R. Eaty farm with initial production of 60 and 100 bbls. Oil Well Drilling Co.'s second well on the McLemore, 2 miles southwest of Panther, found 18 feet of Stray sand at a total depth of 186 feet and produced 15 bbls.

Henderson County

In the Niagara Pool, in Henderson County, P. E. Tichenour's No. 5 J. E. Knight pumped 40 bbls. Thomas Wittmer's No. 7 C. M. Gish farm produced 1,500,000 feet of gas, and his No. 8 pumped 35 bbls. initial, same farm. Pearson & Parks' No. 1 R. F. Parker pumped but 5 bbls. the first 24 hours.

McLean County

McLean Development Co.'s No. 1 on the G. B. McManama, in the Grindstone Hill area of McLean County, reported at 100 bbls. initial at 1,172 feet. W. A. West and others' test on the R. A. Brabtree developed a dry hole at 1,380 feet.

In Breckenridge County, James C. Ellis and others report a dry hole on the Matthews farm.

In Hancock County, McDonough & Ford's test on the Ben Vogles farm reported with a volume of 1,500,000 feet of gas at 500 feet. The well is near the northeast corner of the farm.

EASTERN KENTUCKY

In District 3, Monticello Field of Wayne County, Pigeon Rock Oil Co.'s No. 15 on the Stearns Lumber Co. land is reported good for 10 bbls. under pump. Smith-Cameron Oil Co.'s No. 3 C. E. Bell, same district, 2 bbls. initial.

In District 16, Lee-Owsley County, Ashcraft & Barnes' No. 5 J. A. Curry, 4 bbls. in 24 hours. In Lawrence-Johnson Counties, Swiss Oil Corp.'s No. 8 Dan Skaggs, District 22, pumped 3 bbls. from the Weir sand, and the same company's No. 35 Sanford Lyons farm, Dis-

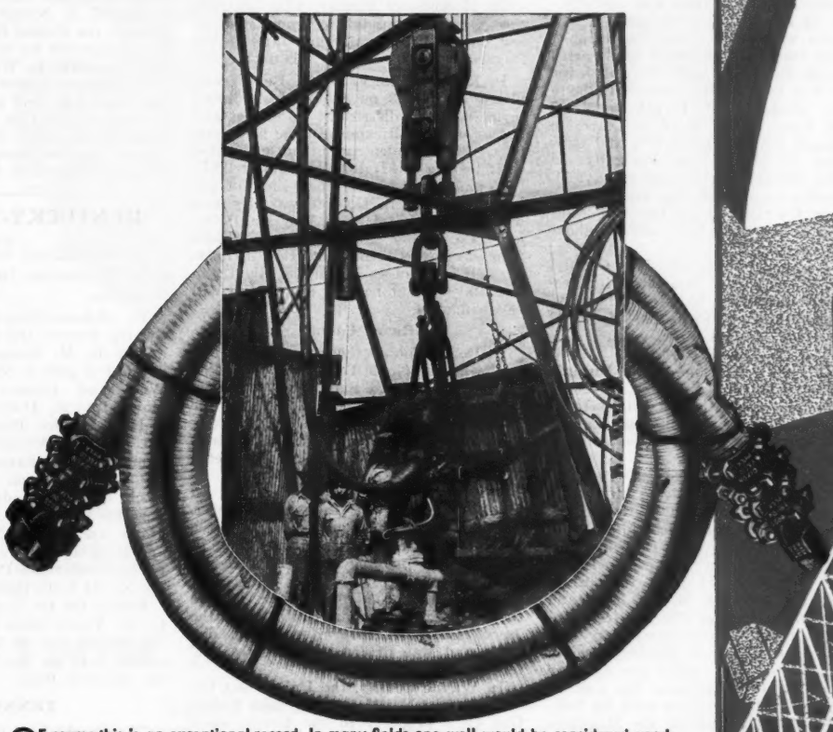
(Continued on Page 86)

DRILLED 79 WELLS

AND STILL GOING STRONG WITH

GOODALL

SEMI-METALLIC ROTARY HOSE



OF course this is an exceptional record. In many fields one well would be considered good; but it goes to show that you can depend on "Goodall Semi-Metallic" to give dependable results . . . Hose was purchased by the United Producers Company and is shown working on a well near Wichita Falls, Texas. The names of the men in this picture, reading from left to right are: O. F. Campbell, Doak Adkins, Troy Cox, Driller, and A. R. Kincaid.

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CONTINENTAL

Unusual Greene County, Pa., Gas Well

Philadelphia Gas Co.'s Completion Good for 3,000,000 Feet. Largest Oil Well of Week in Holmes County, Ohio

By Special Correspondent

PITTSBURGH, Pa., July 28.—New production from the oil sands totaled but 225 bbls. initial, for the week and this was mostly in Southeast Ohio. Offsetting that, the gas completions were more than fair, and each district was represented, with the largest gasser in Southwest Pennsylvania.

The largest oil well was reported from Holmes County in Southeast Ohio. There the East Ohio Gas Co. completed No. 5 in the once active pool in Hardy Township, and in Section 27 on the S. H. Sterling farm. It was drilled to the Clinton at 3,526 feet and produced 15 bbls. naturally the first day, which was increased by a shot to 100 bbls. the first 24 hours. The only other well of any size, in the East, was in Muskingum County, where Palmer and Geisinger completed their test on the Heber Slack farm in Washington Township to the Clinton at 4,075 feet and after shot it produced 70 bbls. the first day.

SOUTHEAST OHIO

Athens County had two additional completions, both small. In Section 1, near Guysville, Lodi Township, the Preston Oil Co. completed its test on the Emma Bean farm to the second grit and it is showing for a light gas well estimated at 50,000 feet. In Section 20, near Albany, Lee Township, the Letonia Oil & Gas Co. completed No. 2 on the E. Knowlton farm to the grit at 1,159 feet and it is a 1-bbl. pumper.

In Delmont County there was one completion. W. C. McBride, Inc., completed its second well on the Grant Wadsell farm, in the northeast quarter of Section 1, Somerset Township, to the Injun sand at a depth of 1,452 feet. There was no showing and it was abandoned.

Holmes County had one other completion located on the Emanuel White farm in Section 15, Pichland Township. There the Ohio Fuel Gas Co. completed its test of that farm to the Clinton at 3,620 feet and it was dry.

In Medina County, the Oko Oil & Gas Co. completed No. 7 on the Celestia Richards farm, Lot 2, sectional, Chatham Township, to the Cow Run sand at 450 feet and after shot it made 10 bbls. the first day.

In Meigs County, and in the northwest quarter of Section 11, Sutton Township, the Twenty-Five Associates, Inc., and others completed No. 21 on the William Carnahan farm to the Cow Run and after shot it produced 6 bbls. the first 24 hours.

In Muskingum County there was a fair gas well completed. The Wehrle Co. completed its test on the L. and M. Geyer farm, in the northeast quarter of Section 15, Union Township, to the Clinton at 4,417 feet and it is estimated good for 700,000 feet.

Test of Old Pool

Noble County was the scene of a test in an old pool. The Ohio Fuel Gas Co. completed its No. 1 on the Joseph Calland farm, in the southwest quarter of Section 33, Marion Township, in the old Summerfield gas pool, to the Berea grit at 1,709 feet and it is showing for 334,000 feet of gas. The rock pressure in the old pool is 125 pounds.

In Perry County there were three completions, one a very fair gas well. The Hopewell Gas Co. completed its test on the Harry Lehman farm to the Clinton sand at 2,995 feet and it is estimated good for 1,000,000 feet. This farm is in the northwest quarter of Section 15, Reading Township. In the northeast quarter of Section 29, Pike Township, the Pure Oil Co. drilled its test of the John and Cora Diller farm to the Clinton at 3,410 feet and it will make about a 2-bbl. pumper. In Monroe Township of this county, and in Section 13, E. C. Marshall and others completed their test on the C. V. Porter farm to the Berea at 1,160 feet and it is good for 2 bbls. a day.

Tuscarawas County was inactive with but one completion. The Federal Oil Co. completed its test on the Reichman farm, Warwick Township, to the Clinton at 4,700 feet and it is a fair gasser good for 500,000 feet.

WEST VIRGINIA

There were but few oil wells completed during the week in West Virginia, and there will be less from now on as evidenced by the lack of new rigs and drilling in oil areas. There are quite a few gas wells waiting on water for completion and these will probably be reported next week. Of the oil wells completed, the largest was in Sherman district, Calhoun County, where L. P. Bickel completed his No. 2 on the R. M. White farm to the Maxon sand at 1,824 feet and it is good for 10 bbls. a day naturally. In Sheridan district of the same county, M. F. Crawley completed his test on the Abraham Ice farm to the Injun at 2,011 feet and it was shot and will be about a 2-bbl. pumper.

In Grant district, Ritchie County, Warner-Quinlan Co. completed its second well on the T. E. Moore farm to the Squaw sand at 1,895-1,904 feet and it will make about a 4-bbl. well.

Gas Wells

In Cabell County, the West Virginia Gas Corp. is drilling a well on the Noah Baylous farm in McComas district for a test. It reached the Corniferous lime at 3,612 feet and is slightly deeper at present with no results.

In Boone County, Scott district, the Cambridge Gas Co. completed its test on the Homer Tomkins farm to the Brown shale at 3,750 feet and has a gas well estimated at 400,000 feet. In Crook district, the Mountain State Fuel Co. reached the Berea at 1,851 feet in its test on the Marshall Brown farm and has a gasser good for 250,000 feet. Another gas completion in the county was the test on the Rosa B. Harless farm in Washington district, where the Osborne Development Co. completed its well at 2,157 feet and has a gasser good for 140,000 feet. In Scott district, the Mountain State Fuel Co. completed its test on the Rome Pronce farm to the Berea and Big lime at 1,854 feet and it is a gasser good for 300,000 feet.

In Calhoun County, Godfrey L. Cabot completed his test on the Henry Sturm farm in Sherman district to the Injun sand and it is showing for 400,000 feet of gas.

Clay County had one new gas well and it was light. The Tomkins Fuel Co. completed its No. 1 on the Ralph D. Stevens farm in Pleasants district, at 2,732 feet and it is good for only 95,000 feet.

Gilmer County

Gilmer County was fairly active. Here in Center district, the Steer Creek Oil & Gas Co. completed No. 2 on the A. H. Stump farm to the Berea and it was dry and abandoned. In DeKalb district, the Philadelphia Gas Co. completed its No. 7,567 Quinby Kelley, and a test to the Injun at 1,803 feet and it made a show for about 260,000 feet of gas. In the same district, the Bowser Oil Co. completed its No. 5 on the Z. V. Mitchell farm to the Big lime and it was dry and abandoned. Located on Bull Creek of Tanners Run of this district, Park Bowser completed his No. 3 on the Robert Mitchell farm to the Injun and it was dry.

In Lincoln County, the Mud River Gas Co. completed its No. 2 on the Elizabeth Adkins farm in Jefferson district and it is a very light gasser and will probably be drilled deeper.

In Logan County, Logan district, the West Virginia Gas Corp. completed its test on the Henry Mitchell farm at 3,379 feet and it was dry with a small showing of oil in the Salt sand.

In Kanawha County, the United Fuel Gas Co. struck a duster in its No. 4,233 on the R. G. Quarrier farm in Louden district. It was drilled to the Berea at 1,560 feet and there was no pay.

In Marshall County, the Carnegie Gas Co. drilled its No. 731 on the Thomas Fox farm deeper to 3,010 feet and has a gas well from the Fourth sand. This farm is in Liberty district.

In Monongalia County, Clay district, the National Supply Co. completed its test on the Lemley Marshall farm to the Bayard at 3,510 feet and it is dry.

In Ritchie County, W. H. Bickel completed his No. 3 on the Zack Weinrick farm in Grant district at 2,780 feet and it was dry in all sands. In the same district, Clark Braden and others completed their test on the Hall heirs farm at 2,075 feet, and except for a small show of gas in the Big Injun sand it was dry and will be abandoned. The Warrior Petroleum Co. drilled No. 7 Cornelia Storrs farm deeper to 2,469 feet. It also made a small show of gas from the Big Injun at 2,190 feet but nothing deeper and will be abandoned.

Roane County

In Roane County there was a very fair gas well. The Noble Battie Co. completed No. 3 on the Fred Smith 162-acre farm to the Injun sand and it is good for 1,000,000 feet a day. This is in Geary district. In Smithfield district, on Rush Run, the Fred Oil & Gas Co. completed No. 2 about 800 feet southeast of its No. 1 to the Injun sand and it is good for 250,000 feet. In the same district, the same company completed No. 2 on the F. F. Harless farm to the Injun at 2,174 feet and it is making about 140,000 feet a day.

Tyler County had one duster. It was the test of the Morgan Brothers on the James B. Stewart farm in Union district, and was drilled to 1,984 feet before abandoning.

In Wayne County, the United Gas Co. completed its No. 45 on the Wayne United Gas Co.'s property to the Brown shale at 3,030 feet and it is a gasser estimated at 270,000 feet. This is in Lincoln district.

SOUTHWEST PENNSYLVANIA

The best gas well reported from any of the districts of the Eastern fields was completed by the Philadelphia Gas Co. in Greene Township of Greene County in Southwest Pennsylvania. It was No. 2 on the C. C. Cowell farm and was drilled to the Fifth sand at 3,089 feet and is estimated good for 3,000,000 feet. Two additional completions in Greene County were dry. They were both old wells drilled deeper and were the Peoples Natural Gas Co.'s No. 1 on the Fox Shriver farm drilled deeper to the Bayard sand at 3,350 feet and the Philadelphia Gas Co.'s No. 2 on the Jasper C. Morris farm also to the Bayard at 3,151 feet. The former was in Perry Township and the latter in Greene Township.

In Allegheny County, Robinson Township, in the small extension of a pool being developed there, the Matkovitch Oil Co. completed No. 1 on the Burris Warden lot to the Gordon sand at 2,220 feet. It will make a 5-bbl. pumper.

In Wayne Township, Greene County, H. D. Freeland and others have started their test on the Silas Coen farm and are drilling at 200 feet.

Starting Tests

In Calhoun County, the Goodwin Gas Co. has a rig up for its test on the John R. Lockney farm, in Sherman district. In Sheridan district, the Chemical Oil Co. is rigged up for its test on the Clara B. Halbert farm. In the same district, Ira B. Haught had to shut down at 1,450 feet his test on the Alva Elder farm for lack of water.

In Gilmer County, DeKalb district, most of the wells are shut down for water. In Kanawha County, Cabin Creek district, the Inland Gas Co. has materials on hand for its test on the J. B. Scott and S. P. Smith farm. In Mason County, Colonge district, the Federal Fuel Corp. has started drilling for its test of the G. T. Thornton farm. In Roane County, Geary district, Godfrey L. Cabot has spudded in and started drilling his test on the G. B. Nestor farm. In the same district, the United Carbon Co. has made a new location for a test on the Preston Helmack farm. In Wirt County, Clay district, Norman Agnew has completed a rig and started to drill on his test on the C. C. Jackson farm on the waters of Flint Run. In the same district, Pollack and Meyers have completed their rig for a test of the Pollack and Meyers farm.

KENTUCKY-TENNESSEE

(Continued from Page 84)

trict 33, produced 10 bbls from the same formation.

In Johnson-Magoffin Counties the Swamp Branch Oil & Gas Co.'s Nos. 1 and 2 B. M. Stone farm, District 31, pumped 7 and 3 bbls. initial from the Weir sand. Oliver Jenkins' No. 3 Joe Howard farm, District 30, pumped but 1 bbl. Peoples Pittsburgh Trust Co.'s No. 8 D. M. Wheeler farm, District 29, pumped 5 bbls. Same, drilling No. 2 Carter Wheeler farm, same district. Bed Rock Oil Co. is drilling No. 1 Oscar Wheeler farm, and Hudson, Collins and others are drilling No. 19 on the Eliza and Mahala Conley's farm, also same district. Cumberland Petroleum Co. is drilling No. 44 L. C. Bailey farm, District 25.

Leeper Oil Co. is drilling No. 6 on the C. D. Veach farm in Daviess County. Leeper Oil Co. & McMahan drilling a second test on the Van Cleve farm in the Maxwell Pool.

TENNESSEE

The Cumberland Oil Co. of New York is drilling at 480 feet in its No. 2 Martin Garrett in the western part of Overton County and 2 miles south of the wells around Fox Springs, on the Obey River, where Pratt and others of Illinois have obtained results at very shallow depth. They drilled one well deeper last week and got 150 bbls. daily. No. 1 well on this farm got a good flow of gas at 630 feet, probably in the Upper Sunnybrook.

The deep test by Kirkwood & Campbell 6 miles north of Cookville is fishing at 1,700 feet. The well being drilled by Kirkwood & Campbell 1 mile north of Carthage, on the Turner farm, is fishing at 470 feet.

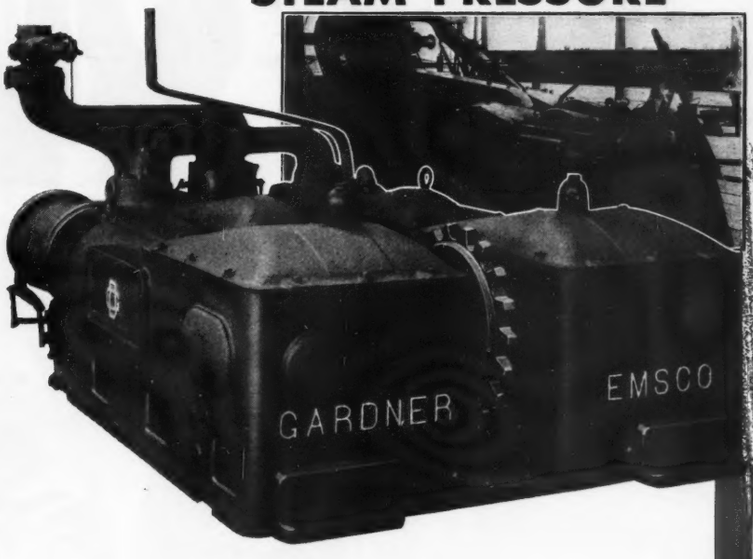
The well being drilled by T. J. Newell and others on the Oakley farm, 8 miles north of White Bluff in Dickson County, got a good show of oil at 215-30 feet, the same horizon that produced the gas in No. 1 on the same farm. It will be drilled deeper. A well is drilling in the same locality on the Turner farm by Woods & Kenyon at about 200 feet and finding formations running regular.

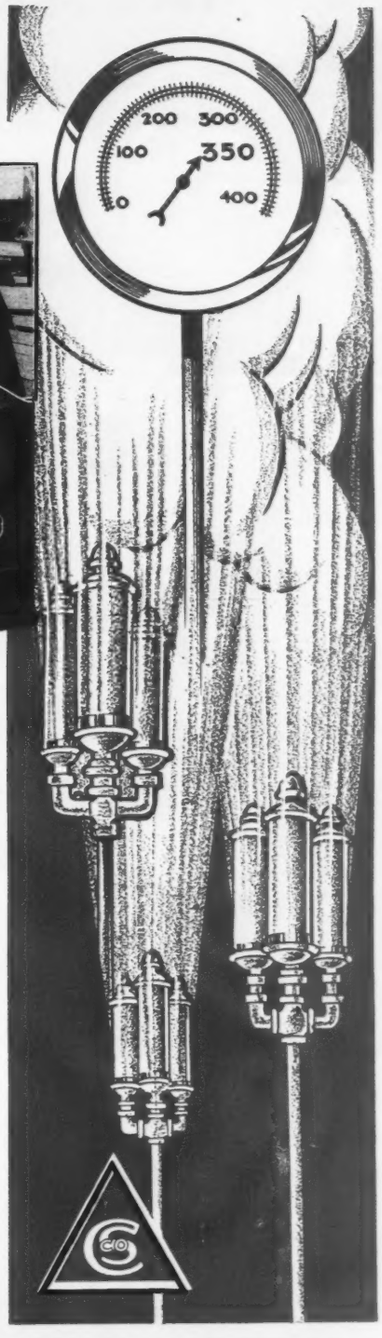
J. W. Young is looking after two rigs in Lincoln County, where he is breaking into a shallow gas pool owned by Chattanooga interests.

Deep tests by a New York concern are reported going steadily down, one about 6 miles south of McMinnville and the other near Sparta. The latter is in White County and the former in Warren County, both in the central part of the State.

BUILT FOR **350 LBS.**

STEAM PRESSURE





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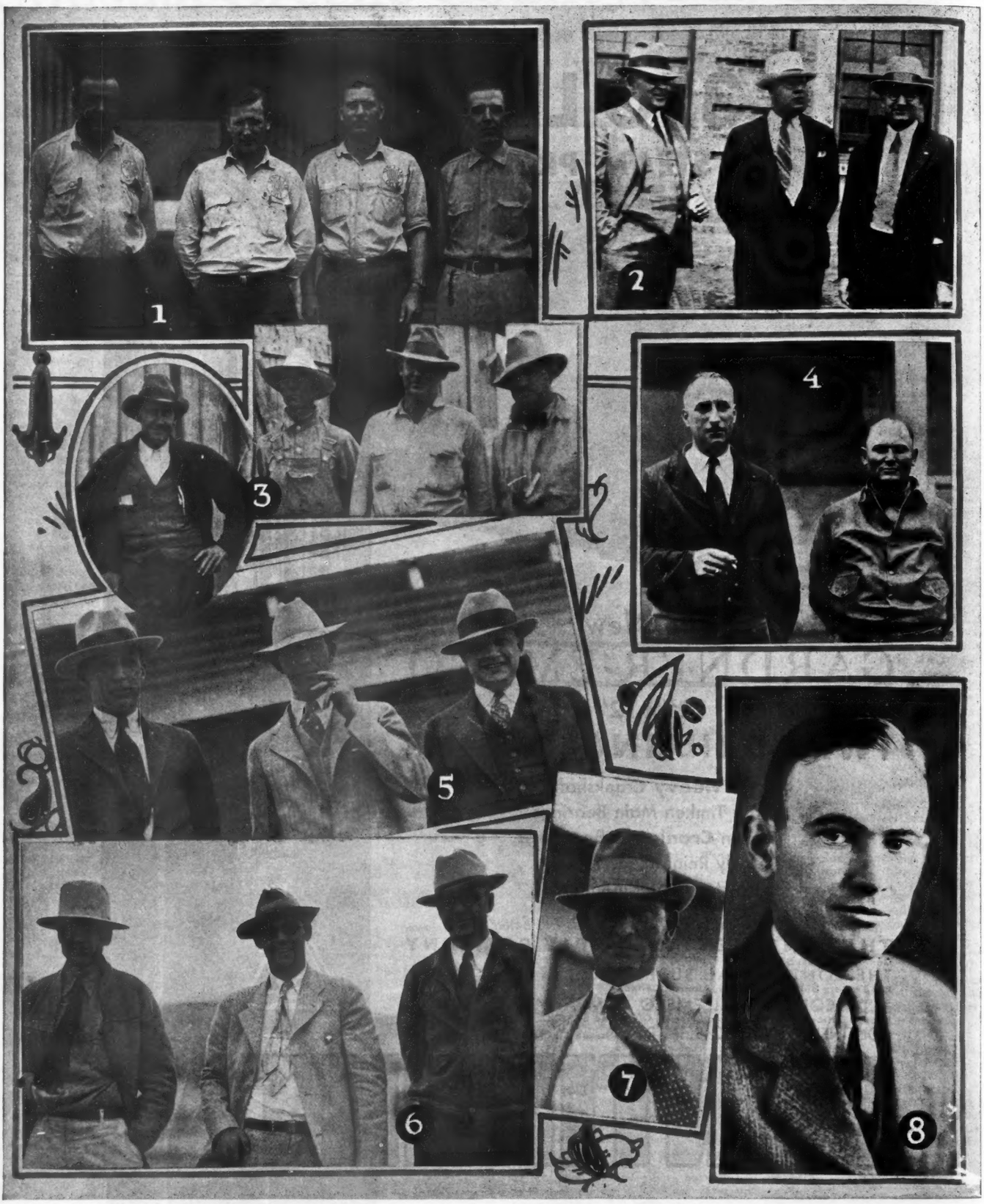
CONTINENTAL

Some Men You Often See in the Oil Fields



1—Charles O'Donnell, superintendent; Charles Brooks, chemist; M. G. Sala, office man; and Bruce McClaflin, chief engineer, Sinclair Oil & Gas Co.'s plant No. 14, St. Louis, Okla. 2—D. J. Wallace, Mid-Continent Oil and Gas Association, Tulsa; C. L. Hightower, Texas Pacific Coal & Oil Co.; and H. N. Blakeslee. 3—W. F. Sherman, pipe line gauger; C. D. Barnhart, production department; J. L. Kale, production gauger; and H. C. Chrissman, pipe line gauger, Pure Oil Co., Van Field, Texas. 4—E. D. Parker, superintendent gasoline department, and A. F. Hanna, chief engineer, Coline Oil Co., Oklahoma City. 5—C. P. Parsons, Halliburton Oil Well Cementing Co.; Charles Alcorn, Shell Petroleum Corp.; and F. J. Wetzell, Ingersoll-Rand Co. 6—H. B. Hill, Bureau of Mines, Dallas, Tex.; Harvey Hardison, California Co., Yates Pool; and Charles Carpenter. 7—R. W. Richmond, umpire, Yates Pool, Texas. 8—Hugh D. Crider, chief geologist, Muskegon Oil Corp., Muskegon, Mich.

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BY GETTING

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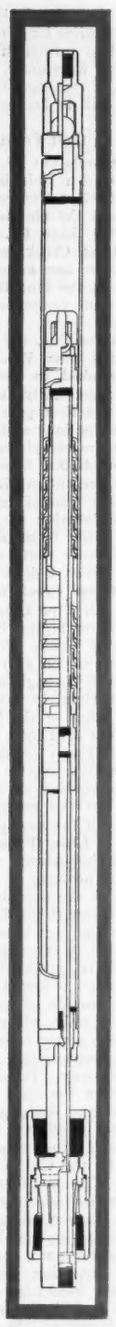
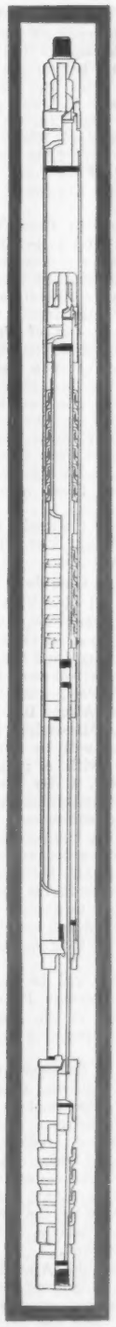


CALIFORNIA TYPE

D+B

INVERTED TYPE PUMPS



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Important Oil Pipe Lines Started

First Half of Year Saw Beginning of Two Big Lines From Mid-Continent Northerly. New Pools Connected

The first half of the year 1930 saw the beginning of large crude oil pipe line construction in which most of the work will be done in the last half of the year. The largest of the pipe line projects started in the January to June period are those of the Ajax Pipe Line Co. from Oklahoma to a Mississippi River junction with the Illinois Pipe Line, and the Union Gulf Pipe Line Co. from Oklahoma to Pittsburgh, Cincinnati and Toledo.

The pipe line work in Central and West Texas was made up principally of short lines and extensions, some of the latter being very important as they run from West Texas into the recently opened field in Lea County, New Mexico, which is already regarded as one of the potentially big fields of the United States. The completion of the Pure-Van pipe line from Van Zandt County to Smiths Bluff on the Gulf Coast was the most important construction work on the eastern side of the Lone Star State. In the Coastal region of Texas lines from Refugio, Darst Creek and Humble to take the big production of those important pools, were features.

Neither California nor the Rocky Mountain fields saw much pipe line building in the first part of the year.

Two Major Pipe Line Jobs

Two of the major oil pipe lines have started construction work near Tulsa, from the Glenn Pool area in Oklahoma, to points east. The Ajax Pipe Line Co., one of the lines, has started work laying pipe from the Glenn Pool, near Tulsa, Okla., to a point near Alton, Ill., where the line will cross the Mississippi River.

The Ajax pipe line will be a double parallel 10-inch line with a maximum capacity of 65,000 bbls. a day. It will have nine intermediate pumping stations with triplex pumping equipment. Contracts for this pumping equipment were awarded to several pump manufacturers. The pumps will maintain between 600 and 700 pounds pressure in the line. It is believed the system now under construction will be finished and running oil some time during the first quarter of 1931.

The Ajax pipe line will be supplied with crude by the Oklahoma Pipe Line Co. another subsidiary of the Standard Oil Co. (New Jersey) operating in Oklahoma and Kansas.

The crude oil will be transported from Alton east via the Illinois pipe line which connects with the Buckeye Pipe Line, which in turn delivers crude to the Cleveland and Toledo refineries of the Standard Oil Co. of Ohio. The Imperial Oil, Ltd.'s pipe line connects with the Buckeye line at a point north of Findley, Ohio, and crude for the Imperial refinery at Sarnia, Ontario, will be transported by this method.

The construction of the Ajax line is in such a manner, it is understood, that will permit it being converted into a gasoline line carrier, and the fact that the system is being constructed as two parallel lines has caused the belief that half of the system may be utilized for the transportation of motor fuel from Group 3 territory into the consuming markets which may be served in a profitable manner from Alton, Ill.

Union Gulf Pipe Line

Gulf Oil Corp. is meeting the general invasion of its home marketing area by an important program through Union Gulf Corp. which was recently organized. The new subsidiary the Union Gulf Corp. is building a 900-mile 10-inch pipe line from a point near Tulsa to Pittsburgh, Pa., and will build new refineries in Pittsburgh and Cincinnati and it has recently purchased a refinery at Toledo, Ohio. While the company's announcement indicates that the new pipe line will be primarily a crude carrier, it is expected in keeping with the trend of the times the line will be so constructed as to be available for gasoline transmission if this should be deemed advisable later on. Another important feature of the Gulf's expansion program is the building of a number of bulk terminals along the Ohio, Monongalia and Allegheny Rivers.

The new pipe line will start at a point south of Tulsa in the Glenn Pool in Creek County, and will have a maximum capacity of 35,000 bbls. a day. The new line will have intermediate pumping stations every 50 miles. The high pressure areas will be gas welded and the low pressure electric welded. The pipe for the new line is being furnished by the National Tube Co. and deliveries are being made. The pressure on the line between stations is expected to be 700 pounds. Construction work is under way. A new station is being constructed in Section 1-17-12, in the Glenn Pool, with a capacity of 70,000 bbls. a day. The new station is about 2 miles east of the Perryman station which has been in operation for a number of years.

The new line is designed to supply the new refineries to be purchased or erected at Toledo, Pittsburgh and Cincinnati, Ohio, and maybe another at some more westerly point. The capacity of these plants has not been made public. The Paragon Refining Co.'s plant at Toledo has a capacity of 8,500 bbls. a day and if the company transports 35,000 bbls. a day it will leave a balance of about 26,000 bbls. a day to be divided between the Pittsburgh and Cincinnati plants.

Officials of the Union Gulf Pipe Line declare the route of the new line will be from the Glenn Pool in Oklahoma northeastward to a point about 15 miles south of St. Louis where it will cross the Mississippi River and run directly east to a point about 20 miles south of Indianapolis, where a branch line of 6 or 8-inch pipe will be carried to Cincinnati. The 10-inch line will continue on northeast to Toledo, to supply the Paragon refinery. The route of the line from there is expected to be in a straight line to Pittsburgh. The size of the line from Toledo to Pittsburgh has not been decided but it is expected to be 8 or 10-inch. The Union Gulf's line will cross the Ajax line in several places from the Glenn Pool to Grand River, Mo.

North and West Texas

During the last six months pipe lining in West Texas and North Texas has been devoted mostly to the laying of short lines and gathering lines to new wells, pool extensions and semiwildcats, although three lines were built into the rapidly growing pool at Hobbs, N. M., from Texas, and another 8-inch from that area is to commence immediately, while still others are rumored for this field, which now appears as a major pool similar to the Yates Pool, Pecos County, the Hendricks Pool, Winkler County, and the Van Field in Van Zandt County, East Central Texas.

Into Southwestern New Mexico

The Atlantic Pipe Line Co. completed 78 miles of 8-inch line from its Midland tank farm, Texas, to the Hobbs Field, New Mexico, and started running oil through the line on July 8, capacity of the line being about 20,000 bbls. per day.

The Shell Pipe Line Co. completed a 22-mile line from the Hobbs Field to a point on the Texas Pipe Line Co.'s line which runs from the Lynch area to Jal and thence to Winkler County, and the Texas Pipe Line Co. will transport Shell's oil from this point to Winkler County where Shell Petroleum Corp. has a tank farm and two pipe lines running south to McCamey thence to the Gulf Coast and one to Healdton, Okla.

The Humble Pipe Line Co. was the first company to complete a line into the Hobbs area. It constructed an 8-inch line from Winkler County, and has nominated to take 10,000 bbls. per day from the Hobbs Field, as has the Shell Pipe Line Co. The Atlantic Pipe Line Co. has nominated 15,000 bbls. per day as its present desires.

Lines From Penn Pool

The Gulf Pipe Line Co. was the first to give an outlet to the Penn Pool, Ector County, which was discovered by Robert R. Penn, October 7, 1929. A short 4-inch line was built by the Gulf company from the pool to its Monahans-Midland 10-inch carrier.

The second line into the Penn Pool was a 4-inch carrier to Winkler County by the Burford Oil Co. which has a refinery at Pecos City.

The Humble Pipe Line Co. built an 8-inch connecting line from the Penn Pool into Crane County through which its Winkler-McCamey line runs, and to which it connected, and the company is transporting 6,000 bbls. daily from the field through this line, via McCamey and on to the Gulf Coast.

Numerous Short Lines

The Magnolia Pipe Line Co. which has a line running north of the Penn Pool from Winkler County to Midland and on east, built a 10-mile 8-inch connecting line from the Penn Pool to this carrier.

Brown & Fox laid 2 miles of 2-inch line from their discovery well in the F. Willig Survey, Irion County, to the Santa Fe Railroad near Mertzon and erected a small loading rack at that place, shipping out oil to the San Angelo refinery at San Angelo. Carl Cromwell, who later brought in three small wells in this area, laid a short line to the Brown & Fox line and is also shipping out oil from the loading rack erected by the former producers.

Buell & Hagan and the Atlantic Pipe Line Co. laid a short 2-inch line from the Atlantic Oil Producing Co.'s No. 1 Shearer in the Masterson Pool, Pecos County.

Dunnigan Brothers built a short 2-inch line from their discovery well on the French farm in the Guadalupe County School Lands Survey, Taylor County, to a loading rack on the Texas & Pacific Railroad near the town of Tye.

North Central Texas Lines

In North Central Texas the Waggoner Refining Co. laid approximately 30 miles of 6-inch line from Electra to Wichita Falls to supply Wichita Falls refineries with crude oil from the Waggoner Pasture in western Wichita County and eastern Wilbarger County.

Many gathering systems and short lines were laid in the North Central Texas district and Panhandle district during the year, and some of the carriers had their capacities increased by the addition of pumping units, or loops. The Texas Pipe Line Co. built an additional three units on its 8-inch main line of the Panhandle, stepping the capacity of that line up to around 62,000 bbls. daily.

The Phillips Petroleum Co. constructed 32 miles of 6-inch welded line from the Bowers-Jackson area in Gray County to the company's refinery at Borger, giving Gray County another outlet, which was badly needed due to production from its flush production pools crowding the pipe lines to capacity all the time.

Texas' First Gasolines Line

The Magnolia Petroleum Co. is constructing the first gasoline line to be laid in Texas. This line is a 4-inch about 28 miles long, connecting the Magnolia's two refineries in Fort Worth to its Dallas warehouse, thereby saving the expense of transporting the gasoline from Fort Worth to Dallas by truck and tank car.

Gulf Coastal Lines

The completion by the Pure-Van Pipe Line Co. of a 10-inch line from the Van Field of East Central Texas to Smiths Bluff, and the starting of laying by the Gulf Pipe Line Co. of an 8-inch line from Darst Creek, southwest Texas, to Sour Lake has added two more trunk systems to the long list which have been laid to Gulf Coast ports from other territories.

The Pure line, the only pipe line outlet of the new Van Field, which now has a choked in production of around 25,000 bbls. daily, started running oil around the first part of July. The line is 210 miles long and when all six pump stations are completed it will have a capacity of 45,000 bbls. daily. Three stations at present are in operation. Smiths Bluff, the coastal terminus of the line and the location of Pure Oil Co.'s refinery, tank farm and terminal, is a short distance south of Beaumont on the Neches River, a deep water ship channel.

Darst Creek to Spindletop

The Gulf Pipe Line Co. has just started work on laying its 8-inch line from the Darst Creek Field to Sour Lake. This line, which also will serve the Salt Flat Field, through which it passes, will be approximately 200 miles long. The last 45 miles of the line from Crosby to Sour Lake will loop the company's present Gulf Coast trunk line. From Sour Lake, Gulf's system extends to Lucas, the company's tank farm south of Spindletop, but the company's present plans do not call for new pipe for that lap.

Lines From Refugio

Other important, although not large, pipe line projects on the Gulf Coast had to do with the providing of adequate outlet facilities of the Refugio Field, where early in the year a serious congestion resulted due to the rapid development of a large daily production with only one combination 6 and 4-inch line to handle the oil outside of tank cars. Refugio, although only about 35 miles inland from deep water terminals of the Corpus Christi district, had been neglected in a pipe line way. It was not until late in 1929 after the field was a year and a half old and daily production had risen to 20,000 to 25,000 bbls. that even that one small line was laid. That line, owned by the Gulf Coast Pipe Line Co., then a William Morgan interest, extended from the field to the company's terminal at Harbor Island. It by no means was able to handle the production of the field although run to over capacity. With rapidly mounting daily production at the field and increasing congestion a pump station was built midway on the line which increased the capacity to around 15,000 bbls. daily and since then the line has been looped with 8 and 10-inch lines giving a capacity for the entire system of around 45,000 bbls.

Further pipe line outlet for Refugio was given this year by the Humble Pipe Line Co. which put down an 8-inch line from the field to the Humble Oil & Refining Co.'s refinery at Ingleside, a distance of 28 miles. This line was completed in April, the company starting purchases in the field April 1, with the posting of 75 cents for heavy oil and applying a Grade B Gulf Coast schedule to the lighter oil. The prices were raised in the general price advance of April 10. It is the intention of this company to extend the line to the new

(Continued on Page 95)

Big Gas Lines Under Construction

Projects Started in First Half of Year. Gasoline Pipe Lines Will Reach Out to Far Distant Points

Pipe lines of large size and great capacity intended to serve some of the largest cities of the northern Mississippi Valley with natural gas produced in the Texas Panhandle and southwestern Kansas were projected and construction work started in the first half of 1930.

In addition to the natural gas lines several lines which will convey gasoline from refineries to far distant bulk stations were also started in the first six months of this year.

Important extensions to lines in the southern states which are served with gas from the North Louisiana fields added to the large amount of gas line construction work that characterized the year thus far.

The winter will be well under way before the last work is done on the gas line projects begun between January and June, and many communities that never dreamed of enjoying the privilege of being served with the cheapest and cleanest of fuels will be doing so this year or early in 1931.

Major Projects in Mid-Continent

Three of the largest natural gas pipe lines now under construction in the United States start in the Panhandle area of Texas and, when completed, will supply cities and towns in Texas, Kansas, Nebraska, Illinois, Minnesota, Indiana and Kentucky with other extensions probably in Ohio.

In March of this year the Moody-Seagraves interests of Houston, Tex., organized the Missouri Valley Pipe Line Co. for the purpose of constructing a 24-inch line from the Hugoton Field in Stevens County, Kansas, to Omaha, Des Moines and other points in the North Central states. Right of way was obtained and, it is understood, pipe was ordered for the line. The Lone Star Gas Co. of Dallas then purchased the Missouri Valley Pipe Line Co., Moody-Seagraves retaining only their gas acreage in the Hugoton Field, which is being developed by the Argus Gas Co., with B. A. Hardie, now of Dodge City, in charge.

The Lone Star Gas Co. assumed the pipe contracts of the former Missouri Valley Gas Co. and is proceeding with the construction of the line, along the lines as originally planned. In addition it is extending the line to start in the Panhandle Field of Texas, the original program of the Missouri Valley Gas Co. calling for construction from Hugoton, Kansas, only. This line also will be extended 100 miles or so south from the Texas Panhandle Field.

Texas to Indianapolis

The Missouri-Kansas Pipe Line Co., through a newly formed subsidiary, the Texas Interstate Pipe Line Co., is constructing a 24-inch pipe line from the Texas Panhandle to Indianapolis. When the line is completed it will include a hookup with the Insull interests, a long-term contract having been closed between the Missouri-Kansas Pipe Line Co. and the Illinois Light & Power Co., which has franchises in different cities of Missouri, Illinois and Indiana.

Amarillo-Chicago Line

The Continental Construction Co. has been organized as a building unit for the $100,000,000 natural gas line from the Texas Panhandle to the Chicago, Ill., area. The new line will be a high pressure type and is a joint project of the Cities Service Co., the Insull interests, the Standard Oil Co. (New Jersey), Skelly Oil Co., Phillips Petroleum Co., Producers & Refiners Corp., The Texas Company, and the Columbian Carbon Co.

The construction of the line will be under the direction of Henry L. Doherty & Co. An office has been opened in Kansas City, Mo., and another in Chicago.

Quinton to Muskogee

Southwestern Natural Gas Co. has started work on its 112-mile 16-inch gas pipe line from the Quinton Field in Oklahoma to Muskogee, Sapulpa and Tulsa. The line will take gas from the Mid-Western Oil & Gas Co.'s properties.

The company has opened offices in the Exchange National Bank Building, Tulsa, with L. E. Farley, in charge, according to an announcement by H. G. Scott, president of the company.

Gas Line from Perry to Oklahoma City

The Cities Service Co. has completed a 20 and 24-inch gas line from 15 miles south of Perry, Okla., to the Oklahoma City Field. Tests were conducted on 13-mile sections of the line and it was opened for use June 20. The line is approximately 51 miles in length and was completed in 68 working days. The line consists of 10 miles of 24-inch pipe and the remainder 20-inch. Capacity is estimated at 100,000,000 feet of gas a day. This line also ties into another line to Cambridge, Kans., which is connected into the system serving cities in Kansas and Missouri. It also establishes a connection with a line from Pampa, Tex., to Kansas City, Mo.

Phillips Gasoline Line

Phillips Petroleum Co. has announced plans for a gasoline line from its refinery in the Texas Panhandle to Kansas City and St. Louis, Mo. The line will be used to transport motor fuel and other refined products and is expected to have a capacity of 25,000 bbls. a day.

The Borger refinery in the Texas Panhandle has been increased until it now has a rated capacity of 15,000 bbls. a day. The company also has a large natural gasoline output in the Texas Panhandle totaling approximately 7,500 bbls. a day.

The gasoline line will be used to serve retail outlets reducing the rail charges from the Panhandle refinery. It is also reported the line will be in a position to act as a common carrier serving other refineries in the Mid-Continent Field, with distribution at points served by the pipe line.

Pipe has been ordered for 700 miles of line pipe for a gasoline line at least half the mileage being in 10-inch pipe, and the other half in 8-inch.

Great Lakes Gasoline Line

The organization of the Great Lakes Pipe Line Co., a corporation sponsored by Continental Oil Co., Barnsdall Oil Co. and others for the purpose of constructing a 1,350-mile gasoline line from Oklahoma refineries to Chicago and other points in the Great Lakes region, has been announced.

The line is being built to serve Continental refineries at Ponca City and Sapulpa, Okla., and Barnsdall plants at Okmulgee and Barnsdall, Okla., and other refineries in the Mid-Continent Field, and enable them to send their products to the Great Lakes region and intermediate points.

A survey of the route to be taken by the pipe line is being made. The main line will begin at Barnsdall, Osage County, Oklahoma, and proceed in a direct line to Kansas City, Mo., and still farther north to Des Moines, Iowa. At Des Moines the line will be divided, one line being laid to Chicago, and another line to Minneapolis. Later on additional lines from Chicago to Milwaukee and from Des Moines to Omaha may be laid. According to present estimates, this line will be a 30,000-bbl. system.

It is planned to establish pumping stations along the lines at 50-mile intervals in order to maintain constant pressure and move gasoline to its destination with all possible speed. Pump stations will also serve as terminal points. From these terminal plants it will be possible to serve company stations and dealers within a radius of 50 miles by the use of tank trucks.

Rocky Mountain Gas Lines

Several major gas line systems are under construction or projected in the Rocky Mountain area. The Southern Union Gas Co. is building a line from northwestern New Mexico to supply natural gas to Albuquerque, Santa Fe and Las Vegas in the central part of the State. This line, which probably will be completed this fall, will involve the construction altogether of 312 miles of line. The gas will be taken principally from the Kutz Canon wells in San Juan County and from the three gas wells on the Ute structure near the Colorado line owned by the Midwest Refining Co. and the Producers & Refiners Corp. The Southern Union company purchased during the period the Mesa Grande Gas Co. and the Durango Natural Gas Co., which supplies Durango, Colo., and surrounding territory with gas. This system was completed last year by the Hope Engineering Co. It also is supplying Farmington with natural gas and through an affiliated company, the Gas Co. of New Mexico, gas was turned into the mains this spring in the towns of Clovis and Portales, N. M., this extension being a part of the Pecos Valley Gas Co. system.

Jal, N. M., to Phoenix, Ariz.

A major project to be undertaken is the construction of a gas line from the Jal Field in Lea County to Douglas, Ariz., to supply gas to the Phelps-Dodge Corp.'s copper smelter and mines at Bisbee, Clifton and Morenci. The line will be 210 miles long and will cost approximately $14,000,000. This project will be built by the Western Gas Co., and will parallel the oil line of the Paso-Tex Pipe Line Co. from Winkler County to El Paso, Tex. The Calumet & Arizona Mining Co. also is reported to have signed contracts for the use of the gas.

The only gas line construction in Colorado was a 6-mile extension of the Colorado-Wyoming Gas Co.'s system from Arvada to Golden, near Denver, the line consisting of 4-inch pipe. Several projects are in the preliminary stage. The Fulton Petroleum Co. has secured franchises to supply Grand Junction, Fruit and other towns in Mesa County, and is drilling a gas well on the Garmesa Dome in Garfield County to furnish a supply. Construction has not yet started. Arnold A. Odlum of Denver, representing local interests, has acquired a franchise to supply Craig, in Moffat County, with natural gas, but work has not yet started. Affiliated interests have a gas well on the Baggs structure in Carbon County, Wyoming, but a closer source of supply which may be available has recently been opened 8 miles from Craig by the Midwest Refining Co. on the Bell Rock structure. A. J. Hardendorf of Lamar, in the southeastern corner of Colorado, has applied to the state utilities commission for a permit to build a line from Stevens County, Kansas, into Colorado to serve the towns in Prowers County.

Utah Gas Line

The Western Public Service Co., through the Wasatch Gas Co. and the Uintah Pipe Line Companies, subsidiaries, is building an 18-mile lateral line from Garfield, Utah, to Toelle at a cost of $200,000 to supply the International Smelting Co. and residents with gas. This company also has obtained a permit to construct an extensive system of more than 200 miles of lines into southern Idaho from connections with its trunk line at Ogden, Utah, to supply Pocatello and other cities, but actual construction has been held up temporarily by litigation in which the Consolidated Public Utilities Co. of Pocatello is asking for a hearing before the supreme court on the permit granted by the state utilities commission.

The only project under way in Wyoming is that of the Minnesota Northern Power Co. for the construction of a 55-mile line from the Billy Creek Gas Field, in Johnson County, to Sheridan by way of Buffalo. This line will consist of 8-inch pipe and will be constructed by the Hope Engineering Co. Completion is expected late in September. Gas will be purchased from the Carter Oil Co. The concern recently acquired the Sheridan Gas Co., which has the local distributing system. The projected line from Wyoming to Montana, which has been discussed at intervals for several years, is still hanging in the balances with no definite information available as to the prospects.

Montana Gas Lines

The first half of 1930 saw the inauguration of construction on one of the largest pipe line projects undertaken in Montana for years. The Montana Dakota Power Co., now a part of the Northwest States Utilities Co., announced in February that pipe had been ordered for a 190-mile gas line from the Cabin Creek gas area in eastern Montana to Bismark, N. D., and intermediate towns. The Hope Engineering Co. of Mount Vernon, Ohio, was awarded contract for laying the line and in April the pipe stringing began. The line consists mainly of 12-inch pipe. At the end of June the line was almost completed, the crews having made record time.

Early in the year the Pondera Utilities Co. completed a 15-mile branch from its Shelby-Conrad line to serve Valier. The line is part of a 94-mile system serving Choteau, Conrad and the Pondera Field. The entire system consists of small pipe. This company also became a part of the Northwest Utilities Co. at the time of the merging of a number of gas-producing and distributing companies in Montana.

The Cut Bank Utilities Co., a local organization, began work on a gas line from the Drumheller well on the Headlight Butte structure to the town of Cut Bank. This line is not yet in operation.

Gulf Coast Gas Lines

The increasing demand for natural gas by cities, towns and industries along the Gulf Coast has forced the two major transportation and distribution systems to take steps to increase the capacities of their lines. Houston Gulf Gas Co., a subsidiary of the United Gas Co., has just started work on laying of 100 miles of 16-inch loop pipe on its trunk line from Southwest Texas to Houston. The looping will include 60 miles of pipe between the Refugio Field, where the company has extensive gas reserves, and Edna, and 40 miles westward from Houston.

Houston Pipe Line Co., an E. H. Buckner interest, which operates a second trunk line from Southwest Texas to Houston, is completing a 12-inch auxiliary line from the Refugio Field to a point near Fannin, Goliad County, where it will tie into both the 18-inch main line and the 12-inch loop laid last year. The new line, which is 25½ miles long, leads directly out of the company's LaRosa station in the field.

This company also has completed a 4-inch line, 16 miles long, from Midfield south through Blessing and Palacios. Earlier in the year it put down a 12¾-inch line from Boling to Long Point, a distance of 13 miles, to serve the Texas Gulf Sulphur Co.'s plant.

Texas Gas Utilities Co. completed the construction of 62.6 miles of 10-inch electric welded gas line from the Rycade's gas field on the Chittim ranch in Maverick County, Texas, to a point on Devil's River, 12 miles northwest of Del Rio. It has been tested with 600 pounds pressure and will supply natural gas to the

(Continued on Page 95)

Shot May Improve Well in Penn Pool

Deeper Drilling Into Lime in Northwest Side of This Field in Ector County Fails to Increase Its Production

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 28.—The northwest side of the Penn Pool, Ector County, did not show up so well today when The Texas Company and Cosden Oil Co.'s No. 8 Connell, in the SE cor., Section 2, Block B-16, flowed only 25 bbls. in 24 hours at a total depth of 3,610 feet. Top of the pay in this edge well was logged at 3,498 feet, but drilling 112 feet of lime did not increase production in the well, nor did it disclose a soft spot from which greater production might have been found. A shot will probably be set off to loosen the lime in hope of bringing out a better producer. In the case of most of the wells in this field, shooting has helped them.

Two meetings of the advisory committee and producers of the Penn Pool, in Fort Worth, have been held to discuss proration which is to go into effect in the field, August 1. The second of the two meetings was held today, and operators in the field agreed to cut the production to 10,275 bbls. per day, which represents the amount the four pipe line companies serving the field elect to take during the period from August 1 to 15. Ray Richmond, proration umpire of the field, also of the Yates Pool, Pecos County, compiled potential figures taken over a four-day period in which wells were allowed to flow their capacity. Average potential for the four-day period from the 51 producing wells in the field, was 20,997 bbls. daily. New proration schedules will be compiled at 15-day intervals, and some of the producers hope to have the outlet set up to 12,000 bbls. per day.

Commission to Receive Figures

Figures from which operators agreed to curb the output to 10,000 bbls. daily will now be submitted to the State Railroad Commission, along with nominations from the pipe line companies for final approved and recommendations. There are 32 units of 40 acres each included in the field proration plan, with special units provided in cases where wells do not make the average potential and ratable allowance, consequently such wells will be allowed to flow their maximum.

R. R. Penn and others' No. 1 Goodman and others, located 2,650 feet from the south and 330 feet from the east of Section 27, Block 44, Township 1n, T.&P. R.R. Survey, 19 miles north of the Penn Pool, Ector County, created excitement last week when it encountered a showing of gas at 4,007 feet and a showing of oil at 4,045 feet. Six and five-eighths-inch casing was run at the latter depth and drilling resumed. Another showing of oil was found from 4,068-75 feet at which depth it was last drilling. This showing of oil may not lead to anything further, but it helps to encourage those who have offset or surrounding acreage, and those who have faith in this area.

Farther north in Andrews County, Deep Rock Oil Co. and others' No. 1 Mathis in Section 4, Block A-46, 1½ miles east of the Ogden producer, was shot with 520 quarts from 4,252-4,460 feet and the hole was bridged at 4,305 feet.

Test to Be Made

One thousand feet of fluid is standing in the hole, and as soon as the hole can be cleaned out a test will be made. Total depth of the test is 5,088 feet, but it was plugged back to 4,460 feet to shut off the water before the shot was set off. The first oil show in the test was found at 4,185-88 feet with increase at 4,281 and 4,351 feet. Sulphur water encountered at 4,780 feet caused the operators to plug it back and shoot the upper showings of oil.

R. R. Penn and others' No. 1 M. H. Wilson in Section 20, Block A-37, northwest of the Ogden producer, in Andrews County, which encountered oil at 3,085 feet over a week ago, is drilling ahead at 4,675 feet in gray lime, making small intermittent flows between the 8 and 10-inch casing, the oil coming from 3,085 feet.

An interesting test in Winkler County is Magnolia Petroleum Co.'s No. 3 Scarborough in the NE cor. of the SW of the NW of Section 1, Block 77, about 1¼ miles southwest of the Llano-Scarborough Pool, and in the direction of the Leck Pool. This test may prove a producer, bringing the two producing areas closed together and adding several sections to production in this county.

Figures on the Hendricks Pool, Winkler County, shows a total of 6,777,536 bbls. for the second quarter of 1930 as against 10,503,893 bbls. the first quarter of the year, and 13,052,653 bbls. for the same quarter a year ago, giving a definite picture as to how the field has dropped in production in a year's time. Production in June was 2,082,921 bbls., and estimates have been made that the field will produce from 22,000,000 to 24,000,000 bbls. in 1930.

Failed to Find Shallow Sand

Carl G. Cromwell's No. 2 Tankersley in Section 1,219, G.C.Ry. Co. Survey, south of the Tankersley Pool, Irion County, which was expected to pick up the shallow producing sand around 1,540-50 feet, failed to do so, striking it, however, at 1,556-65 feet, but finding it dry, and the well failing in extending this shallow area. The owners may decide to abandon it at this depth or carry to below 3,300 feet in an effort to pick up the pay horizon found in other tests in this county, especially the Kingwood Oil Co.'s No. 1 Suggs, north of Mertzon, which recently was abandoned after encountering several good showings of oil and drilling to 7,818 feet.

The Phillips Petroleum Co.'s (Interstate's) No. 1 Whitten in the NW cor. of Section 35, Block LL, T.C.R.R. Survey, Schleicher County, which has been holding the interest of geologists, independent operators and company men for many months, especially since it has encountered several gas and oil showings at various depths, encountered salt water at 6,880 feet and is shut down waiting on orders. The owners of the test may plug off the water and shoot the showings of oil which were found higher up the hole, but if the shooting is unsuccessful it no doubt will mean the plugging of this test, one of the most interesting of the Edwards plateau region. The test will be an incentive for other tests in this region, where many blocks of leases have been taken and much checkerboarding of acreage done since the oil showings were found in the test.

Menard County Attracts Attention

The Panhandle Refining Co., Duffy and others brought more attention to Menard County the last week when their No. 2 Eckhart in Section 10, Block 2, T.W.&N.G. Survey, encountered sand from 2,943-55 feet with an estimated 500,000 feet of gas and a showing of live oil at 2,945 feet. Another sand was logged from 2,972-77 feet and 700 feet of water filled the hole in one hour, dissipating interest which had been created by the upper showings of oil and gas. Total depth of the test is 2,977 feet. Six and five-eighths inch casing is being underreamed down from 2,919 feet. Menard County has had several good showings of oil, and has one small gasser on production at the present time, and all evidences point to commercial production somewhere in this region, which has not had an extensive "play" heretofore, but which no doubt will come in for its share of exploration some day, when a high gravity sweet oil pool may be uncovered.

The No. 2 test of the Panhandle Refining Co. is 600 feet east of the No. 1 test which the same company drilled in 1928 and which encountered some oil. It was later completed as dry at 3,235 feet.

The pipe line department of the Tidal Oil Co. has taken a six weeks option on the Landreth Production Co.'s ten 80,000-bbl. tanks, 40-car loading rack, pump station and connecting line at McCamey, possibly with the idea of purchasing them at the expiration of this time if the Tidal Oil Co.'s No. 1 Coleman, located in Section 17-21-36, Lea County, New Mexico, comes in as a commercial producer needing an outlet and storage. The Texas Pipe Line Co. has an 8-inch line serving the area near the Coleman wildcat, and in case it makes a well that company may carry the oil to the McCamey tank farm. The Tidal Oil Co. recently brought in the best well in the Hobbs Field, New Mexico, but this oil is being run by the Atlantic Pipe Line Co. through its 8-inch to Midland.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended July 28

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks—
Deep Rock Oil Co. et al's No. 1 Mathis, 900 ft. from S and W, Sec. 4, Blk. A-46, Public School Land	Plugged back to shoot; total depth 5,088 ft.; makes approximately 10 bbls. oil and 25 bbls. water per day; shut down.
Deep Rock Oil Co.'s No. 1 Miles, 990 ft. S, 1,650 ft. E of NW cor., Sec. 22, Blk. A-46, School Land	Shut down 4,765 ft.
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Fishing for bit 4,011 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; swabbed 476 bbls.; total depth 4,454 ft.; 3,500 ft. oil in hole; now agitating; swabbing 60 bbls. daily; pulled tubing; no production.
Maer & Staniforth's No. 1 Meador, C SW Sec. 8, Blk. A-41	Shut down 1,215 ft.
R. R. Penn's No. 1 Wilson, C, Sec. 20, Blk. A-37, School Land	Drlg. 4,425 ft.; makes small flow every 2 or 3 days from 3,085 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 Fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F.R.R. Sur.	Show oil 1,830 ft.; shut down 2,345 ft.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,750 ft.

COKE COUNTY

Arkansas Fuel Oil Co.'s No. 1 Stepp, 1,020 ft. NE, 2,340 ft. W of SE cor., Sec. 35, Blk. 1-A, H.&T.C. Sur.	Drlg. 3,595 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 3,535 ft.; plugging to abandon.

CONCHO COUNTY

Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120	Machine.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock	Drlg. 1,360 ft.

CRANE COUNTY

Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Show oil 2,995 ft.; shut down 3,993 ft.; rig burned.

(Continued on Page 175)

WEST TEXAS PRODUCTION

Week ending July 26

County—	Wells	Bbls.
Andrews	1	120
Crane	344	33,640
Crockett	48	1,885
Ector	55	17,330
Fisher	7	1,803
Garza	5	49
Howard-Glasscock	519	29,300
Irion	5	221
Jones	73	1,335
Loving	24	1,771
Mitchell	146	2,470
Pecos	479	107,130
Reagan	258	19,035
Runnels	3	9
Scurry	5	13
Taylor	2	111
Upton	249	6,950
Ward	25	2,575
Winkler	596	70,825
Total production this week		296,272
Total production last week		298,707
Decrease		2,435

COMPLETIONS IN WEST TEXAS

Week Ending July 26

Ector County

R. R. Penn's No. 1 Kloh & Rumsey, dry and abandoned, total depth 1,550 feet.

Fisher County

Cranfill & Reynolds' No. 1 Cooper and others, dry and abandoned, total depth 462 feet.

Glasscock County

Associated Oil Co.'s No. 1 Coffee, dry and abandoned, total depth 2,600 feet. Kirby Petroleum Co. and others' No. 6 Phillips, top pay 2,228 feet, initial production 50 bbls. per hour, total depth 2,300 feet. Simms Oil Co.'s No. 6 Coffee, top pay 2,233 feet, initial production 1,584 bbls., total depth 2,290 feet. World Oil Co.'s No. 1 Edwards, dry and abandoned, total depth 2,870 feet.

Howard County

Ward Oil Co.'s No. 18 D. Roberts, top pay 1,342 feet, initial production 85 bbls., total depth 1,374 feet.

Mitchell County

Grant & Teas' No. 1 Handley, dry and abandoned, total depth 3,115 feet.

Pecos County

McCarty Oil Co.'s No. 2 Gray, dry and abandoned, total depth 1,395 feet. The California Oil Co.'s No. 10 Smith, top pay 1,640 feet, initial production 384 bbls. per hour, total depth 1,795 feet. Transcontinental Oil Co.'s No. 1 Unl-

(Continued on Page 95)

UTILITY

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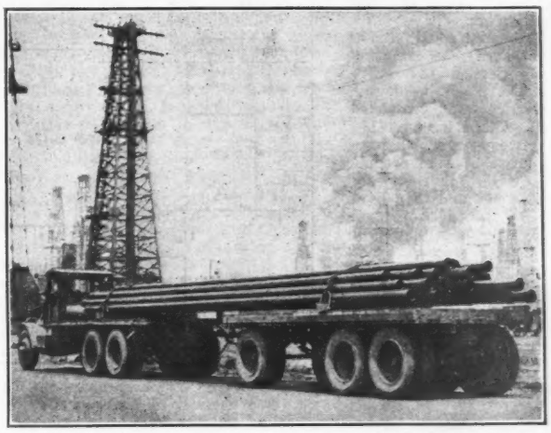

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Panhandle Area Shows Drop in Output

Good Wells Completed in Gray and Hutchinson Counties, but They Fail to Make Up for Marked Falling Off in Old Producers

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 28.—The Panhandle district showed a drop of over 5,700 bbls. this week, while the Wichita Falls district which registered a decline over 7,800 bbls. last week, gained 393 bbls. per day. Several good wells were completed in Gray and Hutchinson Counties in the Panhandle, but the added flush production was not enough to overcome the big decrease of the wells which have been slumping.

Northern Moore County in Block T-3, T.&N.O. Survey, was the scene of renewed interest when the Shamrock Oil & Gas Co.'s No. 1 J. H. Shory, located in the NE Section 187, encountered an oil showing in granite wash at 3,472 feet and started spraying 50 bbls. of oil per day from 3,498-3,503 feet. Six million feet of gas was gauged from 3,350-3,505 feet and at the latter depth the test is shut down for orders.

The well was estimated good for 150 to 200 bbls., and assured the extension of production from Section 164 where the Operators Oil Co. made its discovery last April, when it was completed for a 110-bbl. well. There is about 1½ miles between the two wells which have opened up an extensive area to production from granite wash, for there are no tests near these wells, and they have plenty of acreage on which to expand in all directions. This new find will help give Moore County more activity. The size of this pool will only be known upon further testing in all directions, which will take an extensive drilling campaign over a period of months, for companies holding offset and surrounding acreage will probably not be hasty in rushing in to test their acreage and bring more production to the surface at this time.

Deal in Gray County

Gray County registered a good sized deal in oil properties this last week when the Guernsey Co. sold some 890 acres of leases in Sections 163, 150, 140 and 149 in Block 3, I.&G.N.R.R. Survey to the Operators Royalty Co. for a reported price of $550,000 in cash and $150,000 in oil. There are eight producing wells on this property, averaging around 440 bbls. of oil per day. One drilling well, one derrick and one location stand on the property at the present time. Jim Cloud and Ray Dunnett of Tulsa are at the head of the Operators Royalty Co. which recently sold all of its holdings in the Panhandle to the Sunray Oil Co. The Guernsey Co. is composed of Pampa men, headed by B. E. Finley.

Consummation of the sale of the Navajo refinery at Kings Mill was made this last week to the J. M. Huber Co. which has many and varied interests in the United States, including the Huber Carbon Co., which has several carbon plants in the Ranger, Wichita Falls and Panhandle districts. The plant is of late construction with a capacity of 3,500 bbls. per day, 3,000 bbls. of which is furnished by the Cockrell-McIlroy leases in the area near Pampa.

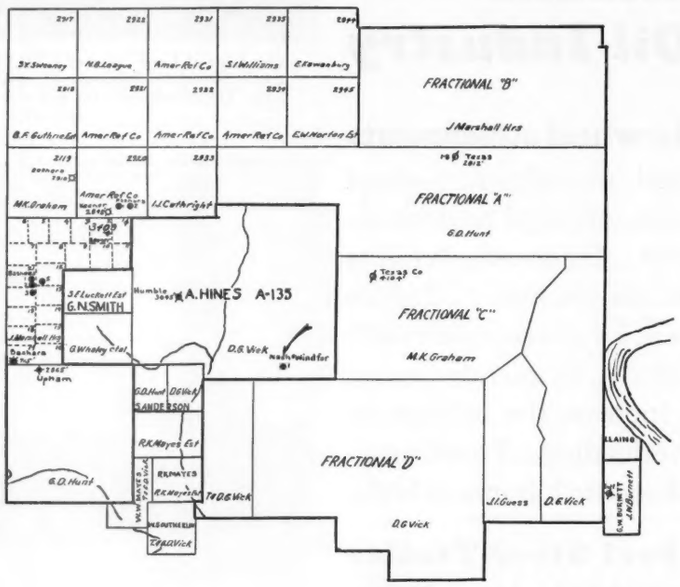
The Continental Oil Co.'s new proration of runs goes into effect August 1 when it will cut its runs in the Wichita Falls district, from leases to which it is connected in Wichita, Archer, Jack and Young Counties, to 50 per cent of its average runs during May and June of 1930. Decreased requirements for crude from this district is the cause of the cut. It will continue, however, to accept, for tender shipment equal to its capacity, oil from any lease to which it is connected, for delivery to connecting carriers or refineries contiguous to its lines.

First to Make Cuts

The Prairie Pipe Line Co. was the first company to make such a cut in this area, and the Continental Oil Co. is the second.

The first deep pool west of the river in Young County put in its appearance this week when Nash & Windfohr's No. 1 Vick, in the Allen Hines Survey, Abstract No. 135, topped a pay at 2,699 feet and was being put on the pump with several different estimates as to its possibilities. About three-quarters of a mile to the west, Bashara has several shallow producers, and several dry holes surround the new discovery on the north, west, southwest, and northeast, but there is plenty of open and untested acreage to the south and southeast for the making of a pool, which will be the first deep pool in western Young County. This well is approximately 9 miles southwest of the town of New Castle. An accompanying plat shows the location on the Nash & Windfohr well in regard to shallow production, dry holes and the river. There is no pipe line connection to the well, and production will have to be run to storage due to rigid proration in other parts of the county, especially in the Riggs Pool, and lack of pipe line outlets for the areas.

The east side of Cooke County seemed due for a new producing area in the last week when the Danciger Oil & Refining Co.'s No. 1 Fleitman, located 150 feet from the north and 450 feet from the west of the 55-acre tract in the J. R. Clark Survey, filled 400 feet with oil in 10 hours from an oil sand found from 950-57 feet. There is no production or dry holes near this new discovery, and many sections are left open to possible production and extension.



—Map courtesy Heydrick Mapping Co.

Plat showing area approximately 9 miles southwest of New Castle which has been opened by the discovery of Nash & Windfohr from sand encountered at 2,660 feet. It was put on pump and was estimated good for 100 bbls. Deep dry holes can be noted on the plat, also the shallow pool to the west.

Lone Star Completes Big Gasser

The Lone Star Gas Co. completed one of the largest gas wells in Eastland County, this week. This well is located northwest of the town of Cisco in a gas-producing area, the gas coming from the Lake sand. This well topped the sand at 3,560 feet and was completed at 3,572 feet making 35,200,000 feet of gas.

Pete Hoffman and others are rigging up on a test to be drilled almost in the town of Cisco. The Chamber of Commerce of that town is going to light the derrick with many colored lights. The derrick will set only one block off the Bankhead Highway which runs from coast to coast.

The Overall Pool produced around 585 bbls. per day for the past week. The Vacuum-Weaver area produced 151 bbls. from 10 wells and the Eastland Pool produced 1,140 bbls. These pools are all in Coleman County. Repressuring in the Eastland Pool has not shown much of an increase in the daily production, and it is believed that the dry sand above the pay sand is absorbing much of the gas which is being put in the wells.

NORTH TEXAS PRODUCTION
Week Ending July 26

Panhandle district—	
Carson County	8,930
Hutchinson County	21,130
Gray County	64,955
Moore County	360
Potter County	9
Wheeler County	625
Total production this week	96,009
Total production last week	101,726
Decrease	5,717
Wichita Falls district—	
Archer County	17,010
Baylor County	1,950
Clay County	720
Cooke County	3,320
Foard County	189
Jack County	2,449
Haskell County	60
Montague County	6,565
Throckmorton County	799
Wilbarger County	23,655
Wichita County	24,325
Young County	15,475
Total production this week	95,617
Total production last week	95,224
Increase	393
Ranger district—	
Brown County	6,100
Callahan County	3,130
Coleman County	2,950
Comanche County	1,240
Palo Pinto County	499
Eastland County	4,455
Shackelford County	6,950
Stephens County	5,356
Total production this week	30,680
Total production last week	30,754
Decrease	74

Wilbarger County

Heydrick's No. 1 Rhoods, dry and abandoned; total depth 2,803 feet. McCary Oil Co.'s No. 1 Waggoner, dry and abandoned; total depth 1,953 feet.

Wichita County

Cottom's No. 1 Cholson, top pay 787 feet, initial production 10 bbls.; total depth 792 feet. Arkansas Fuel Oil Co.'s No. 37 Kemp & Kempner, top pay 1,651 feet; total depth 1,768 feet; plugged back to 1,661 feet; initial production 32 bbls. Clark and others' No. 5 Bickley, top pay 846 feet; initial production 75 bbls.; total depth 858 feet. Hammond & Waggoner's No. 1 Waggoner Brothers, top pay 1,271 feet; initial production 20 bbls.; total depth 1,292 feet. Lambert & Trout's No. 5 Overby, dry and abandoned; total depth 697 feet. No. 6 Overby, top pay 1,231 feet; initial production 50 bbls.; total depth 1,246 feet. O'Neal's No. 1 Honaker, dry and abandoned; total depth 1,043 feet. Panhandle Refining Co.'s No. 14 Burnett and others, dry and abandoned; total depth 1,500 feet. Schalffke & Blair's No. 3 Honaker, top pay 847 feet; initial production 50 bbls.; total depth 858 feet. Steel Drilling Co. and King Royalty Co.'s No. 1 Kemp & Kempner, dry and abandoned; total depth 831 feet. Wolfe's No. 5 Kemp & Kempner, dry and abandoned; total depth 715 feet. No. 6 Kemp & Kempner, top pay 694 feet; initial production 10 bbls.; total depth 702 feet.

(Continued on Page 172)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending July 28
CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Danciger O. & R. Co.'s No. 1 Block, 330 ft. N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	S.D. 3,024 ft; T.P. 3,021 ft; I.P. 30 bbls. oil daily.
Empire G. & F. Co.'s No. 1 Archer-B, 330 ft. N and E, SW cor. SW, Sec. 139, Blk. 3, I.&G.N.R.R. Sur.	Location.
Gibson Oil Corp.'s No. 1 Moore, 990 ft. N, 330 ft. E, N½, SE, Sec. 20, Blk. 7, I.&G.N. Sur.	S.D. 2,884 ft.
North American Oil Co.'s No. 1 Burnett, C NW, Sec. 97, Blk. 4, I.&G.N. Sur.	Location.
Reiger & Steckoll's No. 1 Martin, 330 ft. N and W, SW, Sec. 90, Blk. 7, I.&G.N. Sur.	S.D. 2,912 ft; 12,000,000 ft. gas at 2,815-2,910 ft.
Shamrock O. & G. Co.'s No. 1 Thompson, 330 ft. S and W lines, E 80 ac., NE, Sec. 5, Blk. 7, I.&G.N. Sur.	17,000,000 ft. gas 2,755 ft; S.D. 3,404 ft; T.P. 3,171 ft; swbd. 16 bbls. on test; shot 100 qts. 3,180-3,280 ft; C.O.
Suloch Oil Co.'s No. 1 Bost, 990 ft. S, 330 ft. E, SW, Sec. 1, Blk. S.&F.	S.D. 3,155 ft.
Sweeney et al's No. 1 Locke, 164 ft. N and W, 40-ac. tr. along R.R. in Sec. 57, Blk. 7, I.&G.N. Sur.	S.D. 1,000 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, 1,320 ft. N, 660 ft. W. of W 480 ac., Sec. 99, Blk. 5, I.&G.N. Sur.	S.D. 2,621 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, C SW, Sec. 6, Blk. 5, B.&B. Sur.	Location.
Texas Interstate P. L. Co.'s No. 2 Burnett, C NE, Sec. 77, Blk. 5, I.&G.N. Sur.	Drlg. 1,955 ft.

(Continued on Page 178)

IMPORTANT OIL PIPE LINES WERE STARTED

(Continued from Page 90)

Pettus Field of Bee County, a distance of 35 miles.

Humble to Baytown

The Humble Pipe Line Co. also entered the Humble Field for the first time, laying a 4-inch line to Baytown, Humble Oil & Refining Co.'s refinery. The line was laid to handle the Humble Oil & Refining Co.'s production in the deep sand field on the south side of the dome. This oil previously had been run for the Humble Oil & Refining Co. by the Texas Pipe Line Co.'s line to Liberty, where it was delivered to the Humble Pipe Line Co.

Hankamer to Sour Lake

With the development of the Gulf Production Co.'s new Hankamer Field in southern Liberty County, Gulf Pipe Line Co. laid an 8-inch line from the field to Sour Lake, a distance of 22 miles, where it was tied into the company's trunk system. The line has a capacity of 15,000 bbls.

Sun Pipe Line Co. laid a small line from the new Esperson Field of western Liberty County, Texas, to a connection with its main line at North Dayton. This required the laying of only 5 miles of pipe but it furnished a pipe line outlet for that field.

New Lines in California

Due to the fact that wildcat exploration did not result in the discovery of any new oil fields in California during the first half of 1930, there were no major pipe line installations required during this period. Several short lines from proven fields were laid but in every case these were more in the nature of extensions to existing facilities rather than new lines. In the Kettleman Hills Field of Kings County, the Associated laid a 15-mile 6-inch welded line extending from the Felix lease of the Petroleum Securities Co. to Coalinga. This installation unlike the Union Oil Co.'s new Kettleman Hills pipe line also laid this year, is for the transportation of crude oil. In the Playa Del Rey Field of Los Angeles Basin the Ohio Oil Co., discoverer of this new productive area, laid a 6-inch welded line from its Recreation tank farm to El Segundo where the company has rented tankage facilities from the Standard Oil Co. of California. This new line completed and placed in operation during the middle of June, was the only crude oil pipe line in operation at Playa Del Rey at the end of the first half of 1930 but preparations are already under way to provide additional facilities. The Union Oil Co. has started ditching operations for a new 6-inch line which will extend from its Del Rey lease to existing pipe line facilities located about 15 miles away. An additional gathering line will subsequently be extended up into the town lot section and while present plans only contemplate handling production of the Barnsdall Oil Co. additional contracts will undoubtedly be made if operators ratify the proposed plan to curtail production in conformity with similar work in other fields. So far only about 75 per cent of the producers in this field have signed up to regulate production. The Del Rey Oil & Refining Co. is also making preparations to lay a new line from Playa Del Rey to refining centers. This new line will terminate at Torrance where storage facilities have been leased from the General Petroleum Corp.

One Gasoline Pipe Line

The only gasoline pipe line laid in California during the first half of 1930 was the Union Oil Co.'s 6-inch welded line extending westward from Kettleman Hills to tidewater at Avila in San Luis Obispo County. This line laid for the specific purpose of moving natural gasoline from Kettleman Hills to refining centers is 88 miles in length. It was laid in a little over seven weeks at a cost of approximately $700,000 and has been in operation for several months. It is not likely that any additional pipe lines will be laid out of Kettleman Hills within the next few months but it is a foregone conclusion that several crude oil and gasoline pipe lines will be constructed next year especially if the proposed unit development plan fails of ratification.

Rocky Mountains' New Lines

There was no oil pipe line construction in Colorado or Utah during the first half of the year and in Wyoming there were only minor changes. The Illinois Pipe Line Co. built a 4-mile extension of its system in the Osage Field in the northwestern part of the State to take care of the new Jones Pool which was opened in March. A new pumping station was constructed in connection with the same. The 54-mile line of the Producers & Refiners Corp. from the Little Lost Soldier Field in Sweetwater County to Parco is being replaced with an 8-inch line to take care of the increased production.

Following the development of commercial production in the Border (Buckley) Field, Montana, on the Canadian border, two pipe lines were laid to transport crude from this field to the railroad. The Illinois Pipe Line Co. laid 7 miles of 4 and 6-inch line on the Montana side of the line, terminating at Sweetgrass; the Mape Leaf Refining Co. of Canada laid a line of similar length, consisting of 4-inch pipe, to its plant at Coutts. Work on these lines was begun in February and both were completed in April.

W. F. Brittain and associates started work in April on 8 miles of 3-inch line to carry crude from the Bannatyne, Mont., field to the railroad at a point near Collins. This line was not yet in operation at the end of the half year.

Little Work in Louisiana

Oil line construction in Louisiana was confined to Standard Pipe Line Co.'s 4 miles of 4-inch from Holly gathering system to connect with the Oklahoma-Baton Rouge main line; 18 miles of 6-inch from Zwolle to Oxford station on the same trunk line and 4 miles of 6-inch from Urbana to the Kenova-Mississippi River 10-inch line. Mount Vernon Oil & Gas Co. built 3 miles of 3-inch to handle its production from the field to the L. & A. loading rack in Sarepta. In lieu of a pipe line and to expedite getting materials in and out of the field, W. E. Hall, through agreement with the St. Louis Southwestern Railroad, built 12 miles of standard gauge railroad from Lela into the Carterville Field on Bossier Parish.

Michigan Pipe Lines

Installation of a new crude oil gathering line system from several of the independent oil producers leases in the Chippewa Township, Isabella County, half of the Mount Pleasant oil field to the new refining plant of the Roosevelt Oil Co., and the start of construction of the Pure Oil Pipe Line Co.'s new line from the field to Bay City water frontage are the two principal pipe line developments in Michigan during the first six months of 1930.

The Simrall Pipe Line Co. installed a 4-inch main line with 2 and 3-inch gathering lines to the independent producers and started operation of the line in June. Since then about 2,500 bbls. a day or more has been run to the independent refining plant.

About the time the independent line was started the Pure Oil Pipe Line Co. started laying its 6-inch main from the company storage tank farm in Section 17, Greendale Township, Midland County, to docks at Bay City where crude will be loaded into tankers for boat shipment to Sarnia to the Imperial Refining Co. or to other plants of the Pure company on the Great Lakes.

More than half of the new line, which will be about 40 miles long, already has been completed and the rest will be put in as rapidly as possible.

In the Eastern Area

The Sun Oil Co. is contemplating laying a 6-inch gasoline line from Marcus Hook, Pa., to Cleveland, Ohio, via Pittsburgh. For that purpose a right of way is being taken along the old Crescent Pipe Line route to the vicinity of Pittsburgh, thence to a point just south of Beaver, Pa., and on to Cleveland. It is reported that the pipe for this line has been ordered.

Since the early part of the year, the Standard Oil Co. of Pennsylvania, a subsidiary of the Standard Oil Co. of New Jersey, has been receiving gasoline from the eastern seaboard through the Tuscaroras pipe line of the Standard Oil Co. of New Jersey. The gasoline tank farm is located close to Midland, Pa., on the Ohio River from which barge deliveries are made to the bulk distributing plant on the Allegheny River in Pittsburgh.

CONSTRUCTION STARTED ON BIG GAS LINES

(Continued from Page 91)

power plant of the Central Power & Light Co.

This construction was completed in June and a distributing system is being constructed at this time in the city of Del Rio and connection will be made to the line which passes close to the city.

Also a 16-mile 6-inch line will be laid from the field to Eagle Pass, which is southwest of the field, and a distributing system will be laid in that city. Construction is now under way on these lines.

In Arkansas-Louisiana

Pipe line construction in Louisiana and Arkansas during the first half of the year was negligible, what little there was confined to short laterals connecting adjacent communities to previously completed trunk lines and three short, small dimension lines from the Zwolle, Holly and Urbana districts. Greatest activity in pipe line work was in Mississippi and Alabama where Southern Natural Gas Co. is building branches from its main line from the Monroe and Richland gas fields to Birmingham and Atlanta.

Construction on these, under way, involves approximately 500 miles costing, with compressor stations, in excess of $15,000,000. The Mobile extension of 215 miles will reach from Yazoo City through Jackson and Hattiesburg with laterals to Laurel, Gulfport, Biloxi, Pascagoula and practically every other community of any size south of Jackson. This extension also will likely provide the market for the gas being developed at Jackson.

Extensions on Eastern End

Another extension will be built from Tuscaloosa, Ala., to Montgomery and Selma via Columbus, Ga., 105 miles, with laterals to Tuskegee, Auburn and Opelika. The Macon division will be an extension of 185 miles tapping the 22-inch main line near Atlanta to Macon via Griffin and from Macon east into Wilkinson County with laterals to Thomaston, Milledgeville and other communities. Local distribution will be taken care of by Mississippi Natural Gas Corp., Alabama Natural Gas Corp. and Georgia Natural Gas Corp., all subsidiaries of the Southern.

Additional compressor capacity necessitated by these extensions will be provided by a new plant of five 1,250 horsepower units at Pickens, Miss., an additional 1,250 horsepower unit for the Reform station already in service and a third station of two 1,000 horsepower units at D'Armandville, Ala.

Memphis Natural Gas Co. plans construction of a 50-mile tap from its 18-inch line from Monroe to serve Leland, Indianola, Morehead, Ittabena and Greenwood, Miss., and also another like extension to serve Winona, Carrolton, Grenada and Charleston. New business in communities already served and the addition of these communities will require additional compressor capacity and this will be met by enlarging the Guthrie station in the Monroe Field 20 per cent.

Important Line in California

The Pacific Gas & Electric Co. and the Standard Oil Co. jointly constructed a new major natural gas line extending from Kettleman Hills, Calif., to the San Francisco Bay region early this year, making a total of two main trunks extending northward to San Francisco. The Pacific Gas & Electric Co. laid the first natural gas line up through the San Joaquin Valley about two years ago and has been running natural gas from both Kettleman Hills and Buttonwillow, each field of which was discovered by the Milham Exploration Co. In addition to the new installation of the Standard Oil Co. and Pacific Gas & Electric Co., the Southern California Gas Co. augmented its pipe line facilities early this year by extending its existing system from the Midway-Sunset Field northward to Kettleman Hills, a distance of approximately 70 miles. This just about sums up pipe line construction in California during the first half of 1930, and, while no further lines are in course of construction, the Pacific Lighting Corp. is scheduled to build a new gas line from Kettleman Hills to Los Angeles, a distance of about 175 miles. It has not been determined when work will be started on this projected natural gas line, although it is logical to assume that construction work will be governed by the outcome of the unit plan of operation under consideration by Kettleman Hills operators.

The Columbia Gas & Electric Corp. during the past year purchased two systems of pipe lines formerly used for Mid-Continent crude oil from the Southern Pipe Line Co. in Pennsylvania and from that State line to Morgantown, W. Va., from the Eureka Pipe Line Co. These have been cleaned out and are ready for gas. A new line is now being laid out, and a right of way taken which will serve additional cities in the East. This line will extend from the lower counties in West Virginia and Kentucky on to and through Washington, D. C., up the Shenandoah Valley to Coatesville, where it will connect with the old Southern systems.

WEST TEXAS FIELDS

(Continued from Page 92)

versity, dry and abandoned, total depth 4,921 feet.

Reagan County

Westyde Investment Co.'s No. 1 J. R. Scott, dry and abandoned, total depth 2,854 feet.

Ward County

Atlantic & Delmar, top pay 2,484 feet, shot 120 quarts 2,480-2,520 feet and 150 quarts 2,480-2,520 feet, initial production 77 bbls., total depth 2,520 feet. Sid Richardson and others' No. 3 O'Brien & Edwards, top pay 2,558 feet, initial production 180 bbls., total depth 2,815 feet. Sturm & Paine's No. 1 Cummins, temporarily completed, top pay 2,170 feet, initial production 80 bbls. in 30 days, flows once a month, total depth 2,350 feet.

Runs Through Trunk Lines

Company, size and location—	Bbls.
Atlantic, 10-inch, Houston	29,000
Gulf, 10-inch, Ranger	40,117
Humble, 2-8-inch, San Angelo	37,486
Humble, 10 and 12-inch, Station "A"	53,829
Illinois, 2-8-inch, Del Rio	26,101
Magnolia, 8-inch, De Leon	29,301
Pasotex, 8-inch, El Paso	12,326
Shell, 10-inch, Healdton	34,471
Shell, 10-inch, Houston	21,673
Texas, 12-inch, Houston	21,821
Total	306,125

Runs to West Texas Refineries

Amarillo Ref. Co., Pyote	None
Big Spring Ref. Co., Big Spring	1,366
Burford Ref. Co., Pecos	5,528
Bluebonnet Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	5,847
Col-Tex Ref. Co., Colorado	6,500
Great Western Ref. Co., Big Spring	2,219
Humble Oil & Ref. Co., McCamey	4,996
Midtex Ref. Co., Midland	None
Tonkawa Ref. Co., Pyote	1,808
Wickett Ref. Co., Wickett	135
Total	28,399

Tank Car Shipments

Fox & Thorsen from Mertzon	220
Thomas & Brann from Grant City	275
Orient from Hurdle	85
Southern Crude from Wickett	20,886
Total	21,466
Total daily average distribution	355,990
Total daily average production (including Lea County, N. Mex.)	334,951
Daily average from storage	21,039

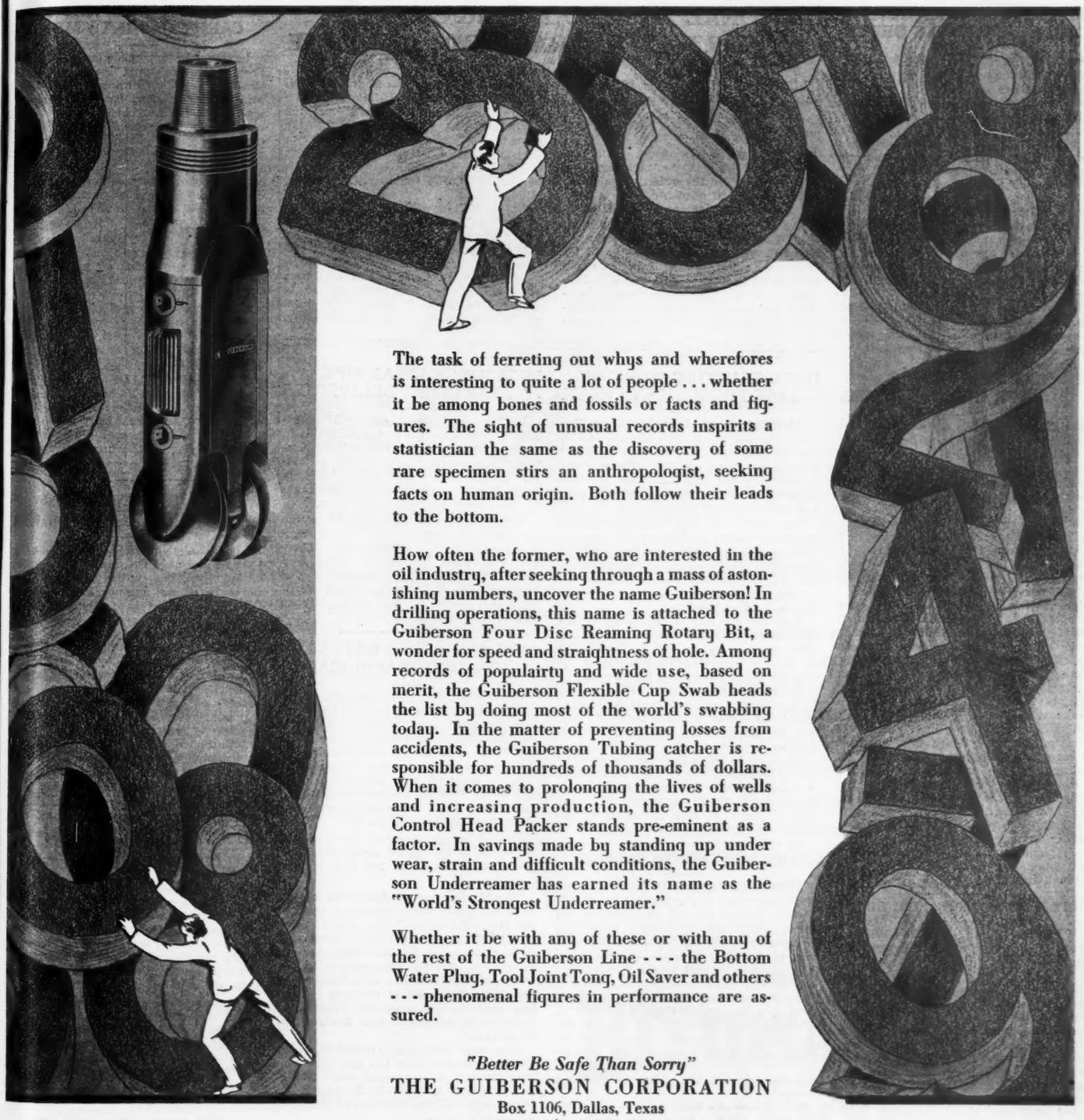
OIL MENS CLUB OUTING

CHICAGO, July 27.—August 28 has been set aside as the day for the next golf tournament of the Chicago Oil Men's Club which is to be held at the Wilmette Golf Club. Bridge players will find tables and partners and everything will be done to insure a grand, good time. Out of town oil men are invited. This is the second outing this year for the club.

WHAT STATISTICIANS

OF SPECTACULAR FIGURES

FIND AT THE BOTTOM



The task of ferreting out whys and wherefores is interesting to quite a lot of people . . . whether it be among bones and fossils or facts and figures. The sight of unusual records inspirits a statistician the same as the discovery of some rare specimen stirs an anthropologist, seeking facts on human origin. Both follow their leads to the bottom.

How often the former, who are interested in the oil industry, after seeking through a mass of astonishing numbers, uncover the name Guiberson! In drilling operations, this name is attached to the Guiberson Four Disc Reaming Rotary Bit, a wonder for speed and straightness of hole. Among records of populairty and wide use, based on merit, the Guiberson Flexible Cup Swab heads the list by doing most of the world's swabbing today. In the matter of preventing losses from accidents, the Guiberson Tubing catcher is responsible for hundreds of thousands of dollars. When it comes to prolonging the lives of wells and increasing production, the Guiberson Control Head Packer stands pre-eminent as a factor. In savings made by standing up under wear, strain and difficult conditions, the Guiberson Underreamer has earned its name as the "World's Strongest Underreamer."

Whether it be with any of these or with any of the rest of the Guiberson Line - - - the Bottom Water Plug, Tool Joint Tong, Oil Saver and others - - - phenomenal figures in performance are assured.

"Better Be Safe Than Sorry"

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GUIBERSON

BETTER BE SAFE THAN SORRY

Pipe Line Construction News

DRESSER COMPANY GETS LARGE COUPLING ORDER

BRADFORD, Pa., July 28.—The S. R. Dresser Manufacturing Co. of this city has received one of the largest orders in the history of the firm. The order, which will run close to $3,000,000, is for special 24-inch couplings which will be used in the construction of a natural gas pipe line from the Texas Panhandle to the Chicago district, an estimated total distance of about 1,400 miles.

Steel which is to be used in the production of the special order is now coming into the Dresser plant. While orders have not been placed for the lateral lines of smaller size, Dresser officials confidently expect that they will be favored with orders for the couplings of such sizes.

The main line of the new pipe line will be 24-inch pipe and will be designed to operate at a minimum working pressure of 800 pounds per square inch.

MICHIGAN GATHERING LINES CHANGE HANDS

MUSKEGON, Mich., July 28.—Sale of two complete oil gathering line systems in two leading Michigan oil fields is announced by W. F. Simrall of Cincinnati, Ohio, president of the Simrall Pipe Line Corp., owner of the lines. Total consideration for the two lines was about $200,000. The larger of the two systems was laid throughout the Muskegon oil field of western Michigan more than a year ago and the smaller recently was completed in the Mount Pleasant oil field of central Michigan.

The Muskegon system including about 19 miles of 8, 6, 4 and 2-inch pipe lines, two 10,000 and one 37,000-bbl. storage tanks on M-20 has been purchased by the Old Dutch Refining Co. and will be operated by its subsidiary, the Old Dutch Construction Co., with an additional 8 miles of 4-inch put in by the Old Dutch company.

The Mount Pleasant line includes 16 miles of 4, 3 and 2-inch pipe now the property of the Northland Oil Co. of Chicago.

About 1,000 bbls. of oil is being run daily through the Muskegon lines to the Old Dutch Refining Co. plant east of the city limits, and about 3,000 bbls. a day is being run to the Roosevelt Oil Co.'s plant in the city of Mount Pleasant from the Mount Pleasant Field through the other line.

OPEN OFFICE FOR PIPE LINE

WICHITA, Kans., July 29.—Williams Brothers, Inc., pipe line contractors, have established a field office in Newton, out of which 85 men already are at work. The company is laying a pipe line for gas from Stennett, Tex., to Indianapolis, Ind., for the Missouri-Kansas Pipe Line Co. The line crosses Harvey County. The force necessary to complete the work through Harvey County will be increased to 300 men, according to the office manager, W. E. Gigsby. Within the next two weeks another office will be established at Burns, Kans., according to instructions received by Mr. Gigsby.

ALPINE TO GET PECOS GAS

MIDLAND, Tex., July 28.—Natural gas from the Pecos County Field will supply the city of Alpine next fall. A contract has been signed by Mayor George W. Baines for Alpine with A. T. Woods, representing eastern capitalists, and a $5,000 bond posted by Woods. Work on the line is to be in full swing within a few days. The gas will come from Pecos wells located near the Brewster County line.

NATIONAL TUBE BOOKS BIG ORDER FOR PIPE TO TRANSPORT GASOLINE

PITTSBURGH, Pa., July 28.—Seventy-five thousand tons of pipe for a gasoline line to be laid by the Great Lakes Pipe Line Co. is to be made at once in the Pittsburgh district plants of the National Tube Co. A contract has just been awarded for the order. Production will be started at once and the first pipe is expected to be laid next month.

The order consists of about 1,400 miles of 4, 6 and 8-inch pipe. The line, it is reported, will be the largest built for exclusive transportation of gasoline and will extend from Barnsdall, Okla., to Milwaukee, Wis. The entire cost of material and construction has been estimated at $12,000,000. The purchasing company is controlled by the Continental Oil Co. and the Barnsdall Oil Corp.

An 8-inch line will extend from the Barnsdall refinery, with spur lines to the plant of the Continental Oil Co. at Ponca City and that of Barnsdall at Okmulgee, to Des Moines, Iowa. Then it will reach to Council Bluffs, Omaha, St. Paul and Minneapolis.

A 6-inch line will be laid from Des Moines to Chicago and a 4-inch extension from Chicago to Milwaukee.

It is proposed to build distributing stations along the lines 58 or 60 miles apart. At these points, gasoline will be drawn off and delivered by trucks to points within a radius of 50 miles. The lines will have a capacity of 30,000 bbls. daily.

HOPE STARTING WORK ON LINE FROM BILLY CREEK

CASPER, Wyo., July 28.—Hope Engineering Co. of Mount Vernon, Ohio, has started work on the pipe line for natural gas from the Billy Creek Field to Sheridan via Buffalo. The line will consist of 8-inch acetylene welded pipe and will be about 55 miles long.

The Hope will put in a distributing system of mains in Buffalo and also do some additional piping in the town of Sheridan. There is already an artificial gas plant, together with a distributing system, in Sheridan. A belt line will also be laid at Sheridan.

Pipe for the line is beginning to arrive at the various stations along the right of way and it will be distributed at once. Trenching machines will be used in digging the ditch for the pipe.

A construction camp is being located in Buffalo and men will work both ways from that town. From 300 to 400 men will be employed at the peak of production.

The line is being laid for the account of the Minnesota Power Co., Minneapolis, Minn. The Iowa Railway & Light Corp., an Isaac B. Smith promotion of Cedar Rapids, Iowa, is also interested in the line.

PIPE FOR LINE TO GREELEY

DENVER, Colo., July 28.—Colorado-Wyoming Gas Co., a subsidiary of the Public Service Co. of Colorado, is receiving pipe for a 12-mile line from Johnstown to Greeley. The line will consist of Republic 6⅝-inch electric weld. The gas will be sold to the Greeley Gas & Fuel Co. which recently was granted a franchise extension on condition that natural gas be available by September 1. The interests which were to supply the gas from the Berthoud Dome were delayed in their plans and in order to comply with franchise requirements, a deal was made with the Colorado-Wyoming company.

NEW PIPE LINE APPROVED

TOPEKA, Kans., July 28.—The Kansas Public Service Commission has approved today the application of the Cities Service Gas Co., a Doherty pipe line subsidiary, for a new 20-inch gas pipe line from the Oklahoma City gas field into Kansas. The pipe line will run just east of Wellington and will connect with the main line from the Amarillo fields northeast of Wellington. This will give the company a large additional supply of gas available for the cities in eastern Kansas and Kansas City.

MISSOURI-KANSAS PIPE STARTS GAS DELIVERIES

Delivery of natural gas by Missouri-Kansas Pipe Line Co. at Cannelton, Ind., through its subsidiary, the Indiana-Kentucky Natural Gas Corp. has been started. At the same time, Missouri-Kansas began supplying gas to the city of Franklin, Ky., near the Tennessee border.

Natural gas will be furnished in the near future to four other Indiana communities in the Cannelton region. These are Tell City, Grandview, Troy and Rockport. Cloverport, Hawesville and Whitesville in Kentucky are to be served from the same new line as rapidly as pipe crews complete their work.

PIPE COUPLINGS RATES DECIDED INAPPLICABLE

WASHINGTON, D. C., July 28.—Railroad freight rates on iron pipe couplings from Bradford, Pa., to Texas and Oklahoma oil fields were found inapplicable and, in some instances, unreasonable, by the Interstate Commerce Commission. Carriers involved were directed to publish before October 7, rates "which shall not exceed those contemporaneously in effect from Salamanca, N. Y."

The principal question involved appeared to be the logical geographical location of Bradford in the rate making structure.

"Bradford seems to belong more logically in the group with Salamanca than in the Rochester group," the decision stated. "This is true not only because of its location on the Buffalo, Rochester and Pittsburgh, directly intermediate to the lower rate points, but also because of the slight difference in distance for the long hauls to Oklahoma and Texas from Bradford as compared with Buffalo and Salamanca."

Two cases were jointly heard in which the Hope Engineering Co. and the Lone Star Gas Co. were complainants, respectively, against the Buffalo, Rochester and Pittsburgh, and the Abilene and Southern railroads.

PIPE LINE SURVEY BY AIR

PONCA CITY, Okla., July 28.—J. D. Kay of San Antonio, Tex., aerial survey pilot, is in Ponca City with a DeHaviland survey plane for the purpose of making an aerial routing of the Great Lakes pipe line which will extend from Ponca City to Chicago, by the Continental and Barnsdall oil companies. Kay's plane is equipped with aerial surveying instruments. He will make a circuit of the complete line.

TEXAS GAS UTILITIES TO CARRY GAS INTO MEXICO

Laying the new Chittim Field-Eagle Pass natural gas pipe line of the Texas Gas Utilities Co., subsidiary of the Appalachian Gas Corp., has begun, according to Ross Holmes, chief engineer. This inaugurates the second project in the company's main pipe line construction program, the first being the Chittim Field-Devil's River line, through which deliveries of natural gas were commenced last month to the new electric generating plant of Central Power & Light Co.

The line now being built will run through the new $6,000,000 Maverick County irrigation project enroute to Eagle Pass, continuing on to the middle of the International Bridge, where present plans call for the delivery of natural gas in the city of Piedras through a Mexican distributing company, or else continuation of the line by the company into Mexican territory.

Piedras Negras is one of the more important Mexican border cities, having a population of about 20,000 and a number of industries. At present the sole sources of heat are kerosene and wood, no gas being available. Present plans call for the completion of the new line by September 1.

WILL BUILD GAS LINE AT MT. PLEASANT, MICH.

MUSKEGON, Mich., July 29.—The Consumers Power Co., large public utility of Michigan, has contracted to purchase the natural gas output of the Isabella Oil Development Co., of Mount Pleasant, it has been announced by Charles W. Tippy, vice president and general manager. A pipe line to gather and distribute the gas will be laid by the Michigan Natural Gas Corp., a subsidiary of the Isabella Oil Development Co., now in the process of organization. The subsidiary has contracts to handle the output of the Development company's wells and is negotiating contracts with other operators at a minimum price of 12 cents per 1,000 cubic feet at the wells.

The Isabella company has 4,000 acres under lease in western Isabella County where two gas wells, one with an open flow capacity of 10,000,000 feet and the other good for at least 2,000,000 feet, already have been completed in the Marshall formation.

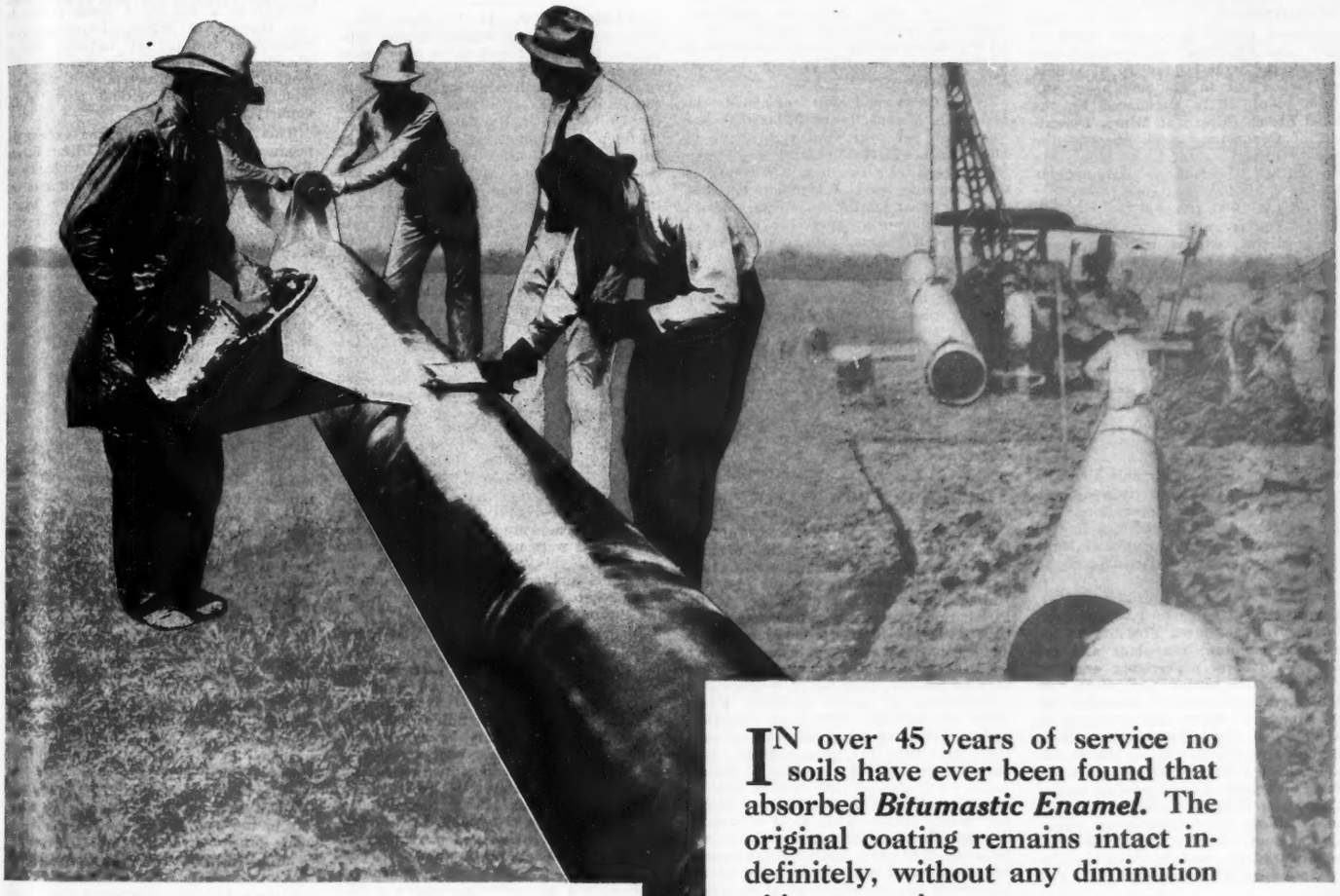
Five representatives of the Consumers Power Co.'s gas operation, construction and right of way departments, are assisting the Michigan Natural Gas Corp. to acquire rights of way and survey the territory for construction of the first 6-mile gas pipe line from the Broomfield Township wells to Mount Pleasant.

Organizers of the Michigan Natural Gas Corp. are: M. Bliss Keller, of East Lansing; and Virgil McClintic and A. E. Butterfield, of Mount Pleasant. They have applied to the Michigan Public Utilities Commission to issue 100,000 shares of no par value stock.

HOPE COMPLETES GAS LINE

WILLISTON, N. D., July 29.—The natural gas pipe line from southeastern Montana to Williston, N. D., has been completed by the Hope Engineering Co. and it will probably have the line to Bismarck and Mandan completed by September 1. The Hope is now shipping equipment for the laying of an extension from a point near Telstad to the Canadian border. The extension is being laid to receive gas from the Sweet Grass fields and also Rogers-Imperial well in Canada.

SO HARD—SO TOUGH—SO INERT that no soil can absorb it.



IN over 45 years of service no soils have ever been found that absorbed ***Bitumastic Enamel.*** The original coating remains intact indefinitely, without any diminution of its protective powers.

It forms a solid non-porous armor that will neither absorb liquids nor be absorbed by other materials.

THERE ARE 14 REQUIREMENTS FOR AN EFFECTIVE PIPE COATING

It must:

1. be waterproof and remain so.
2. be unaffected by external chemical influences.
3. have strong and permanent adhesion to the pipe surface.
4. be inherently stable, inert and unchangeable.
5. be insoluble and incapable of absorption by surrounding soil.
6. be flexible to accommodate changing underground temperatures and resultant expansion and contraction.
7. be highly dielectric to prevent electrolysis.
8. be of substantial thickness on all surfaces.
9. be easily applied under field conditions.
10. be capable of withstanding ordinary handling without damage.
11. be sufficient in itself, requiring no wrappings.
12. be easily applied under any climatic condition.
13. be economically justified by its usefulness.
14. have an established record of proven performance.

This is the fifth of 14 advertisements in a series showing the requirements of an effective pipe coating.

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Natural Gas Developments

GOVERNMENT ANNOUNCES NEW RECORD ON HELIUM

WASHINGTON, D. C., July 28.—The government helium production plant at Concy, near Amarillo, Tex., produced during May the largest quantity of helium ever turned out in one month by any helium plant, it is announced by the United States Bureau of Mines, Department of Commerce, which operates the plant. During the month the plant produced 1,230,350 feet of the nonflammable gas used in airships, containing 97.93 per cent, or 1,204,900 feet, of the element, helium. The operating costs, per 1,000 feet of helium produced, were the lowest on record, and far below any cost figures deemed attainable by specialists in helium production a few years ago.

The month also saw the completion, testing and preliminary operation of the second separation unit of the plant.

Although production exceeded the largest month's output of the Government's Forth Worth helium plant, which formerly supplied the Army and Navy, and also exceeds any previous month's production at the Amarillo or any other plant, the operation was at only about 60 per cent of the plant's capacity when both units are in continuous operation. The output of the Amarillo plant is limited by the demands of the Army and Navy for helium rather than by its capacity to produce.

The gross operating costs for May, which represent the current expenditures from the United States Treasury to operate and maintain the plant and gas field and to cover supervisory expenses in Washington, were $13,146.86, or $10.91 per 1,000 feet of contained helium produced. There was a return to the Treasury of $3,794.75 from sale of the plant's residue gas during the month. Deducting this return from the gross operating cost gives a net operating cost of $9,352.11, or $7.76 per 1,000 feet of contained helium. Production of an equivalent amount of helium at the Fort Worth plant, even when its costs were the lowest, required expenditures of over $30,000.

At the May costs, helium to fill one of the 6,500,000-foot airships now being built for the Navy could be produced by the Amarillo plant with net expenditures from the Treasury of about $50,000.

Work toward the acquirement of gas reserves and erection of a plant at Amarillo was started by the Bureau of Mines early in 1926, when it was apparent that the supply of gas for the Fort Worth plant was failing. The Cliffside structure of the Amarillo gas field was then known to produce gas of 1¾ per cent helium content. In 1927 an operating contract and option covering 20,000 acres of land on the Cliffside structure was entered into by the Government. This was followed by the exercise of the option and other contracts and purchases which give the Government control of the gas in about 50,000 acres of land. The reserve of gas in the structure, and the Government's control over it, assure the Army and Navy an adequate supply of helium for many years.

Drilling of wells to supply the Amarillo plant was started in February, 1928; in the following July construction of the pipe line from the Cliffside structure to the plant site was started and a contract was awarded for erection of the plant buildings. The first separation unit of the plant was placed in production in April, 1929. Since that time efficiency of the plant has steadily increased and there has been a marked reduction in operating costs.

The plant was designed for an initial installation of two separation units, with buildings and auxiliary equipment to accommodate a third unit when needed. As the first unit would supply present demands, completion of the second unit was allowed to await operating experience under the conditions at Amarillo. As a result, the second unit, completed in May, is even superior to the first one in operating efficiency.

With the second unit completed, the plant has a capacity of 24,000,000 feet of helium per year, which is ample to meet the needs of the Army and Navy when the Navy's two new 6,500,000-foot ships are completed. When the plant has a demand that justifies operation of both units continuously, operating costs per 1,000 feet of helium, will be much lower than at present.

The entire development of production of helium has occurred since 1917. Prior to that time helium had been obtained only as a scientific curiosity in laboratories. Probably the total quantity isolated in the whole world did not exceed 100 feet and the cost of producing it was from $1,700 to $2,000 per foot. Now the Bureau of Mines is prepared to produce it at the rate of 2,000,000 feet per month at operating costs well below 1 cent per foot.

PRODUCTS FROM WASTE GAS

In connection with its study of the best methods for the utilization of natural gas under circumstances such that it can not be used directly for fuel, the United States Bureau of Mines, at its Pittsburgh experiment station, has investigated its use in the production of formaldehyde. This compound has extensive use in the manufacture of synthetic resins such as bakelite, from which is fabricated a multitude of useful products. Early work showed that traces of formaldehyde are formed when mixtures of methane (the principal constituent of "dry" natural gas) and air are suitably heated. Later work showed that certain gaseous catalysts such as the oxides of nitrogen enormously increased the yield of formaldehyde. The present work has shown, however, that until further developments are made, this method is impracticable because of the excessive cost of the nitrogen oxides required to produce a given quantity of formaldehyde.

MOUNT PLEASANT GAS CO.

MUSKEGON, Mich., July 26.—The Michigan Natural Gas Corp. has been organized at Mount Pleasant, Mich., to gather and distribute natural gas in the Mount Pleasant oil field. Organizers are: M. Bliss Keeler, of East Lansing; Virgil W. McClintic and A. E. Butterfield, of Mount Pleasant. The company has applied to the public utilities commission for a permit to issue 100,000 shares of no par value stock. This is the first attempt to collect natural gas in the Mount Pleasant Field where considerable casinghead gas is available from producing Dundee oil wells. There are about 150 wells in the field and about half of them make enough gas to flow.

SOUTHERN LOUISIANA PLANS

HOUSTON, Tex., July 28.—Two cities, Abbeville, Vermillion Parish, and DeRidder, Beauregard Parish, have already voted gas distribution franchise to the Moody-Seagraves Gas Co. of Houston in connection with the proposed project to lay a natural gas line into southwestern Louisiana to serve cities in that area. Franchises are to be voted on by 40 other cities, which have been lined up in the Southwest Louisiana Natural Gas Association, to insure the laying of a trunk gas line into that area. The franchises voted will be held in escrow until franchises are voted by the remaining cities.

FIND ETHYL MERCAPTAN LEAK WARNING AGENT

WASHINGTON, D. C., July 28.—Ethyl mercaptan, an organic sulphur compound, has been found to be a practical warning agent for the detection of leaks in natural gas distributing systems, as the result of investigations conducted by the United States Bureau of Mines, Department of Commerce. It is necessary that warning agents of this kind be distinctly malodorous, and in this respect ethyl mercaptan amply fills the bill, as its odor is characterized as that of a mixture of garlic, onions, decayed cabbage, sewer gas, and hydrogen sulphide.

The detection of leakage is a recognized problem in the safe and economic distribution and use of natural gas. Natural gas is practically odorless and therefore lacks the property of indicating significant leakage by the sense of smell, the means most widely used by gas employes and consumers for detecting leaks of the more odorous types of fuel gases. In view of the recognized value of the odor of gas for indicating leakage at the time of occurrence the Bureau of Mines has studied the possibility of adding small amounts of highly odorous substances to types of fuel gas (such as blue water gas and natural gas) that lack warning properties. These studies revealed that the mercaptans were promising substances to accomplish this purpose, not only for odorizing fuel gases but for other purposes where it was desired to give warning through the sense of smell.

In general, the mercaptans closely resemble the alcohols and are often termed thio-alcohols. They differ from the alcohols, however, in that the hydrogen may be replaced by heavy metals to form mercaptides. This reaction apparently takes place very slowly in natural gas pipe lines when the low concentration of ethyl mercaptan vapor necessary for warning agent purposes is used.

Ethyl mercaptan has a very intense, disagreeable odor, detectable in dilutions as high as 1 part ethyl mercaptan in 1,000,000,000 parts of air, and will give warning to conscious persons in concentrations of 1 part ethyl mercaptan to 15,000,000 parts of air or 0.01 pound per 1,000,000 cubic feet of air. It is by virtue of this disagreeable odor that it quickly elicits attention and response when used as a warning agent.

The odorizing of natural gas with ethyl mercaptan was found to be a practical means for detecting leakage and a much cheaper means than usual inspection methods.

Concentrations of 7.7 to 9.3 pounds of ethyl mercaptan per 1,000,000 feet of gas were found very effective in indicating house leaks. It is thought that half that amount or even less would be ample to indicate leaks of significant magnitude.

Concentrations of 31.0 to 46.5 pounds of ethyl mercaptan per 1,000,000 feet of gas were found effective in indicating underground leaks in mains and service lines.

The use of ethyl mercaptan caused no complaints from customers unless leaks were present.

ALLEGHENY GAS EARNINGS

Allegheny Gas Corp., 36 per cent of the outstanding common stock of which is owned by Appalachian Gas Corp., reports net earnings before interest for the first five months of 1930 at $201,321, against $132,441 for the corresponding period of last year and increase in gross earnings of 39 per cent. New contracts have recently been entered into with Pittsburgh Plate Glass Co., East Ohio Gas Co., serving the northern part of the State of Ohio, including Cleveland, Akron, Canton and Youngstown; and Ohio Fuel Gas Co., supplying natural gas in Central Ohio, including Columbus.

STORAGE OF NATURAL GAS

WASHINGTON, D. C., July 28.—According to a statement made public by the Bureau of Mines, Department of Commerce, storage of natural gas in abandoned wells for use in period of peak demand has been accomplished with satisfactory results in various parts of the country.

This means of storing the excess gas produced is being used in California and Kentucky extensively and probably in other areas, it is stated. By it, gas can be stored underground and the supply may be drawn upon later as if it were taken from a new source. Thus there are actually two sources instead of only the original well capable of supplying gas when necessary.

Producing wells could be shut off, or their output diminished when it exceeded the demand in the summer months, but the heavy demand in the winter could not be met with a sufficient supply, in all probability, according to the statement. Underground storage is economical because no tanks or other heavy equipment are needed.

The practice of storing natural gas in abandoned wells has been carried on a number of years. In one instance, at Buffalo, N. Y., it was found that 40,000,000 feet of gas was taken out of the storage well more than was put in. The gain may have been caused by a difference in the methods of measuring the gas when put into the well and when taken out, it is stated. The gas varies in volume according to temperature and pressure.

ACQUIRES W. VA. GAS

Appalachian Gas Corp. now owns more than 95 per cent of the outstanding common stock and has contracted for the purchase of a majority of the preferred stock of West Virginia Gas Corp., according to announcement. This is the fifth acquisition by Appalachian Gas Corp. within the past three months, the others being control of Texas Gas Utilities Co., Southwestern Natural Gas Co., and substantial stock interests in Memphis Natural Gas Co. and Allegheny Gas Corp.

West Virginia Gas Corp., organized in 1927, also owns 95 per cent of the outstanding capital stock of Monickel Gas Co., operated as a subsidiary. Among contract customers are United Fuel Gas Co., International Nickel Co., Owens-Illinois Glass Co., and South Penn Oil Co. West Virginia Gas Corp. and Monickel Gas Co. own or control, through lease or gas purchase contracts, gas and oil rights in 52,405 acres of land in Cabell, Kanawha, Lincoln, Putnam and Wayne Counties in Southwest West Virginia. Union Management & Engineering Corp. will also supervise the operations of West Virginia Gas Corp.

NEW FRANCHISES IN TEXAS

HOUSTON, Tex., July 26.—The Moody-Seagraves Gas Co., a subsidiary of the United Gas Co., of this city, has been granted franchises for the distribution of natural gas in seven additional cities of southern and Southwest Texas. These cities included Hallettsville, Lavaca County; Weimar, Colorado County; Schulenburg and LaGrange, Fayette County; Crockett and Lovelady, Houston County; and Groveton, Trinity County.

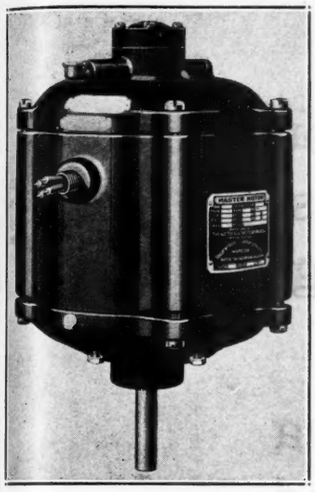
GAS FOR OHIO TOWNS

LIMA, Ohio, July 28.—Columbus Grove, northeast of Lima, will soon be supplied with gas for the first time by the West Ohio Gas Co. of Lima. Work of laying the pipes has been started. The company also will supply gas to Cairo, Bluffton, Ottawa, Leipsic and other nearby towns.

EQUIPMENT AND SUPPLIES

EXPLOSION-RESISTING MOTOR IS ANNOUNCED

The Master Electric Co., Dayton, Ohio, announces an explosion-resisting motor especially designed for use wherever explosive vapors are encountered, such as gasoline pumps, spray booths, gas plants, etc. Incorporated in the design of this



motor are high starting torque, high overload capacity, cool running, quiet operation, vertical or horizontal mounting, large oversize bearings, liberal thrust bearing for vertical types, interchangeable mounting dimensions for all frequencies and for direct current.

Every motor shipped carries a National Board of Underwriters name plate indicating that it has been built under the maximum supervision which the Board of Fire Underwriters is able to give it.

The interchangeable frames used on these motors permit single-phase, polyphase, and direct current motors of the same horsepower, speed and current rating to be installed on the same mounting. This motor is compact and attractively designed and can be purchased in sizes from one-eighth to one-third horsepower, inclusive.

WINCH FOR WELLS NOT OVER 3,000 FEET DEEP

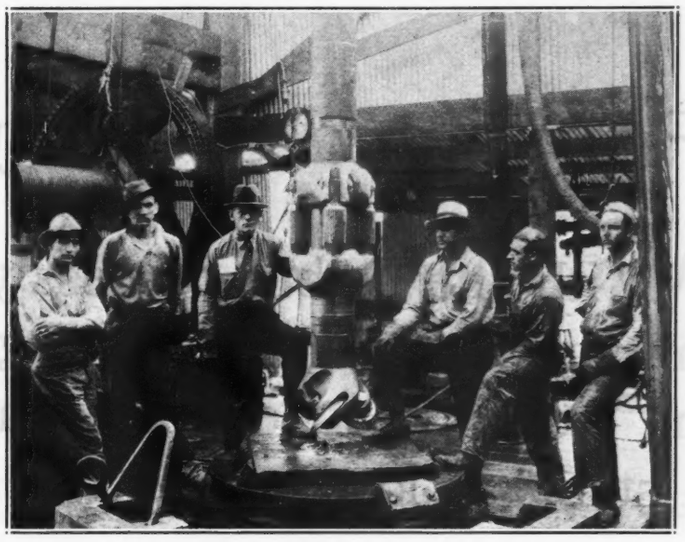
The new W-K-M winch for the United tractor is built especially for rod and tubing pulling on wells 3,000 feet deep, or less. This new W-K-M unit is said to be fast, efficient, powerful, and compact. It is recommended by the manufacturers, the W-K-M Co., Inc., Houston, Tex., for its portability and maneuverability, as one such unit can be used in the place of many individual rig outfits.

Capable of going virtually anywhere under its own power, and of handling all pulling on wells 3,000 feet deep, or less, this unit was designed especially for companies having scattered production over large areas or wells widely separated. Where formerly each rig required its own pulling outfit, the W-K-M winch does the work at one well and then is moved on to the next to handle the job there.

Within its rated power limits, the W-K-M winch handles oil field pulling jobs such as rod and tubing work, bailing, or cleaning out, swabbing, driving bull-wheels, and general utility pulling.

The Superheater Co., Chicago, has moved its offices in that city to Room 1325 Peoples Gas Building, 122 South Michigan Boulevard.

SIGNAL HILL WELL SETS LONG STRING OF STOVEPIPE



Crew of No. 1 Walters with 22-inch Chiksan bit and reamer. Left to right: Earl Strickland, rotary helper; "Slim" Van Landingham, cat-head; "Bill" Stout, tool pusher; "Mutt" Dennis, driller; "Dell" Towns, derrick, and "Speed" Ladd, rotary helper.

Signal Hill has added another to its list of drilling and casing records. This time it is the landing in Walters' No. 1 well of what is said to have been the longest string of 14-inch stovepipe ever run into a well, 1,650 feet, all landed without a stop from the time the shoe joint started in until it was cemented.

According to "Slatts" Love, president and general manager of the Chiksan Oil Tool Co., Ltd., the landing of this long string of stovepipe is of great interest to the drilling fraternity, as it shows that straight hole can be drilled fast and without trouble. The full amount of hole previous to the setting of the string of pipe, 1,650 feet, was drilled at an average of 6½ feet per hour. The first 500 feet was 22-inch hole and the remaining 1,150 feet 19-inch. When surveyed, the hole was reported to be as near vertical as it is possible to drill one, a fact that is unusual in itself for the Signal Hill Field.

This well is being drilled from top to bottom with Chiksan three-way disc bits and reamed with Chiksan three-way roller reamers. From the statements of the Chiksan officials, this test will give operators an opportunity to check the type of hole that the Chiksan tools make in point of roundness, deviations, etc.

TRAILER AND WINCH COMBINE TO SIMPLIFY HEAVY JOB

A pole trailer and Braden hub winch operated in connection with this Dodge Brothers two-ton truck by the Amerada Petroleum Corp. of Oklahoma City combine to make easy the loading and transportation of the big tank lashed in position on the truck and trailer in the accompanying illustration.

E. E. WILD RETURNS TO COLUMBIAN STEEL TANK

E. E. Wild, who resigned as general manager of the Columbian Steel Tank Co., Kansas City, Mo., a few months ago after having been with the company 12 years, has returned to the same organ-

E. E. Wild

ization as sales promotion manager. Mr. Wild has an intimate knowledge of the steel fabricating business and will have charge of all promotion work in local and foreign markets.

BUSINESS NOTES

The Standard Oil Co. of New Jersey has awarded a contract to the Austin Co., engineers and builders, for the design and construction of a building at Linden, N. J., to provide additional space for the manufacture of its insecticides. The cost of the building is approximately $200,000.

Sales of American Brakebloks for the first six months of 1930 were more than double the number sold in the same period of last year, according to H. A. Gillies, sales manager of the American Brake Materials Corp., Detroit. American Brakebloks, a brake surfacing material, were introduced four years ago.

The International Filter Co. and associated companies, International Water Softener Co. and General Zeolite Co., have removed their general offices and engineering departments from 333 West Twenty-fifth Place, Chicago, to larger quarters covering the thirteenth and part of the fourteenth floor of the Buckingham Building.

T. L. Lewis, for 18 years with A. M. Byers Co., and for the last 12 years as general manager of sales, has resigned to become associated with Norvell-Wilder Supply Co., Beaumont, Tex. Mr. Lewis' headquarters will be in Houston, Tex.

B. Charles Warthen, who has been handling most of the purchasing for the Beaumont Iron Works Co., Beaumont, Tex., for several years, has been promoted to the newly created position of purchasing agent. E. J. Roach, formerly plant superintendent, has been made plant manager.

V. W. Mitchell has joined the sales staff of J. H. McEvoy & Co., Houston, Tex. His headquarters will be in Hobbs, N. Mex.

Profits and Security

With the Dubbs process you can make a large yield of gasoline from the cheapest charging stock at low cost

You can sell it readily at a good price because it is the kind of gasoline that tickles the modern automobile engine

You can make money because good market price, low raw material cost and low cracking cost spell profits

You can go on making profits without fear of interruption, because Universal Oil Products

Company guarantees you without limit against any loss arising from patent litigation

The Dubbs process means profits and security to you

What more can a refiner ask?

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

EQUIPMENT AND SUPPLIES

TUBE-TURNS SIMPLIFY MANY PIPE PROBLEMS

By Raleigh S. Hales

Although put on the market a little less than two years ago, Tube-turns have proven themselves of high value in any kind of piping and are in demand for all work utilizing welded construction. They greatly simplify the design and construction of welded piping and have solved many problems in the piping field. They

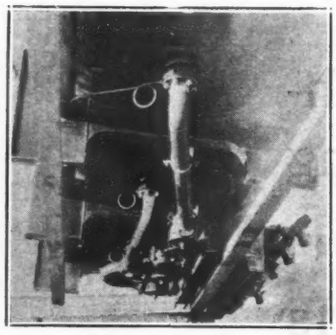


Figure 1—Tube-turns in piping unit of Associated Oil Co.'s tank truck.

materially reduce friction, give added strength and effect a substantial saving in space. By preventing leakage and consequently much expense due to repairs and an occasional shut down, Tube-

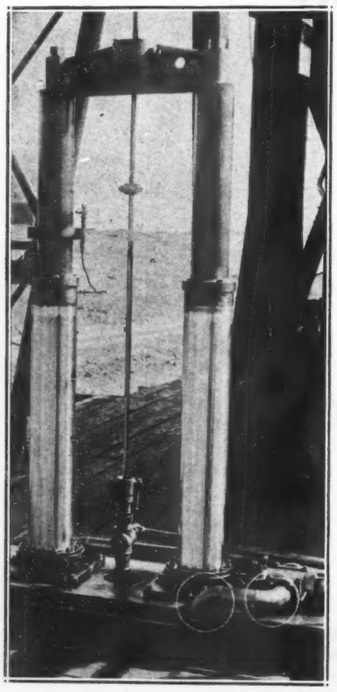


Figure 2—Gas-operated pump used by Western Engineering Co. for pumping oil wells. Tube-turns were employed to obtain smooth, strong and short-radius elbows and return bends in a confined space. Tube-turns were used in both gas and oil lines of the pump.

turns lower maintenance costs. They are made of seamless steel tubing.

The applications of this interesting fitting have steadily increased, not only in major piping layouts, but also in an ever-increasing number of miscellaneous projects. One rather unusual but practical use to which Tube-turns have been put is their adoption as a light, thin wall elbow on the pumping unit of oil and gasoline tank trucks. One of the largest California oil companies has standardized on 2-inch 90° Tube-turns of 16-gauge wall thickness, for its entire fleet of tank trucks. (See Figure 1). Other oil companies are also showing great interest in the possibilities of thin gauge Tube-turns, for this and other applications.

The unusually short radius and practically 100 per cent true cross section of Tube-turns, with no deformation whatever of the pipe walls, make them especially desirable for the application described in the foregoing paragraph, since they effect a substantial saving in both space and weight, at the same time assuring maximum efficiency and strength for a fitting of such thin material.

One of the most progressive western engineering companies recently developed a new type mechanism for pumping oil wells. Realizing the increased efficiency, reduced maintenance, and pleasing appearance that would result from using Tube-turns in the interconnecting piping this company immediately adopted them as a standard fitting for all its units. (See Figure 2).

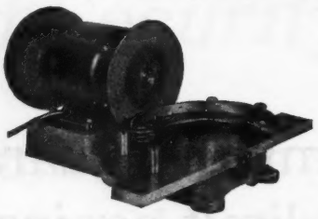
These are only two of the many special uses to which Tube-turns have been applied. Their general use in the petroleum industry has increased enormously since they were first introduced to refinery and natural gasoline plant engineers. The new fittings, forged from seamless drawn tubing, are formed on a radius of one and one-half times the pipe size. They are stocked throughout the country in 45° elbows, 90° elbows and 180° returns in standard and extra heavy iron pipe sizes.

WELDITE FILLET PUTTY

Weldite fillet putty has been offered to manufacturers of welded machinery and equipment by the Fusion Welding Corp, Chicago. The purpose of this putty is to cover weld beads and to give them a smooth finished appearance. The appearance of welded products has kept many companies from using welding to its full extent. Weldite fillet putty is easily applied to weld beads in any type joint or position. It is furnished in a powder form to be mixed with water to any consistency, from paste for applying with some instrument such as a putty knife, to a consistency thin enough to be applied with a brush. A short time after being applied the putty becomes substantially as hard as iron, as it is essentially iron. Some eight months of commercial use, is said to have proven its ability to adhere tenaciously and not to loosen from shock or vibration.

RUSSELL HAS IMPROVED BRAKE LINING GRINDER

The Russell Manufacturing Co., Middletown, Conn., has announced an improved type of molded brakeshoe liner grinder as illustrated. This grinder quickly removes any high spots on the



liners, restores the surface of glazed linings, produces the proper arc on the liner to conform to the drum contour, eliminates main cause of costly "after adjustments." Construction of machine permits dressing the liners as perfectly on the ends as it does in the center and at the same time cleaning and burnishing the entire brakeshoe.

TRADE LITERATURE RECEIVED

"Serving Industry for Three Generations" is the title of a 28-page booklet prepared by the Heppenstall Co., Pittsburgh, Pa., manufacturers of high-grade acid open-hearth alloy steels and carbon steels, piston rods, bit and jar steel for oil-well drilling, and other products

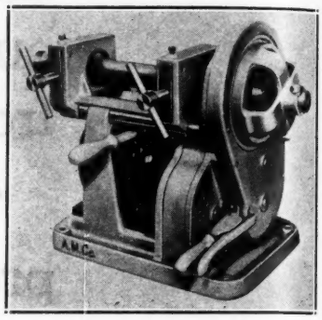
The Maintenance Engineering Corp., Houston, Tex., has issued a new loose-leaf catalog of refinery, pipe line and power plant specialties for temperature, pressure and piping, stocked in its Houston and Fort Worth warehouses.

Goulds Pumps, Inc., Seneca Falls, N. Y., is distributing the second of its series of centrifugal pump selection chart bulletins. This second book covers multi-stage pumps for capacities up to 2,000 gallons per minute and heads up to 2,400 feet. Charts enable the prospective pump user to determine quickly just what pump is best suited to his requirements.

A booklet, "The Hortonspheroid," issued by the Chicago Bridge & Iron Works, describes a new type of oil storage tank to withstand internal pressure. This tank, spheroidal in shape with a flattened bottom, is designed scientifically to use all the metal in its construction in the most effective manner.

AXELSON PIPE-THREADER DESIGNED FOR WIDE USE

A new pipe-threading machine, designed for a wide range of uses, has been developed by the Axelson Manufacturing Co., Ltd., Los Angeles, Calif. Its operation is simple and the machine occupies a minimum of space, according to the manufacturer. The pipe to be threaded remains stationary while the standard square die is revolved, cutting the thread. Long stands of assembled pipe or bent pipe may be threaded conveniently as it is unnecessary to rotate the units. The work is gripped by two jaw chucks which



are practically automatic and instantaneous in action. Standard square dies, obtainable from practically any supply house, are readily adapted to the cutter thread. Threads can be cut on material from one-half to 2 inches in diameter and the power is supplied from a one-half horsepower compound wound motor, installed directly beneath the pipe holder brackets. Electric current of 110 or 120 volts, either 50 or 60 cycle, may be applied.

The manufacturer asserts that the threader will cut at the rate of 17 revolutions per minute on all sizes from one-half to 2 inches and the required time for completing 11 threads is about 40 seconds. After the thread is completed the dies are reversed and during this operation they rotate at 34 r.p.m. In addition to cutting a clean, true thread, attachments are available for the cutter head to permit cutting off, reaming and bolt making.

NEW POWER BOY EMPLOYS GASOLINE ENGINE DRIVE

The Oster Manufacturing Co., Cleveland, Ohio, maker of the Oster-Williams line of pipe and bolt threading equipment, has announced that its No. 412 Power Boy is now available with a gasoline engine drive that will operate for 10 hours on a single gallon of gasoline. It is asserted that the new gas engine Power Boy combination is as portable as the regular Power Boy with electric motor drive, the weight being only a few pounds more.

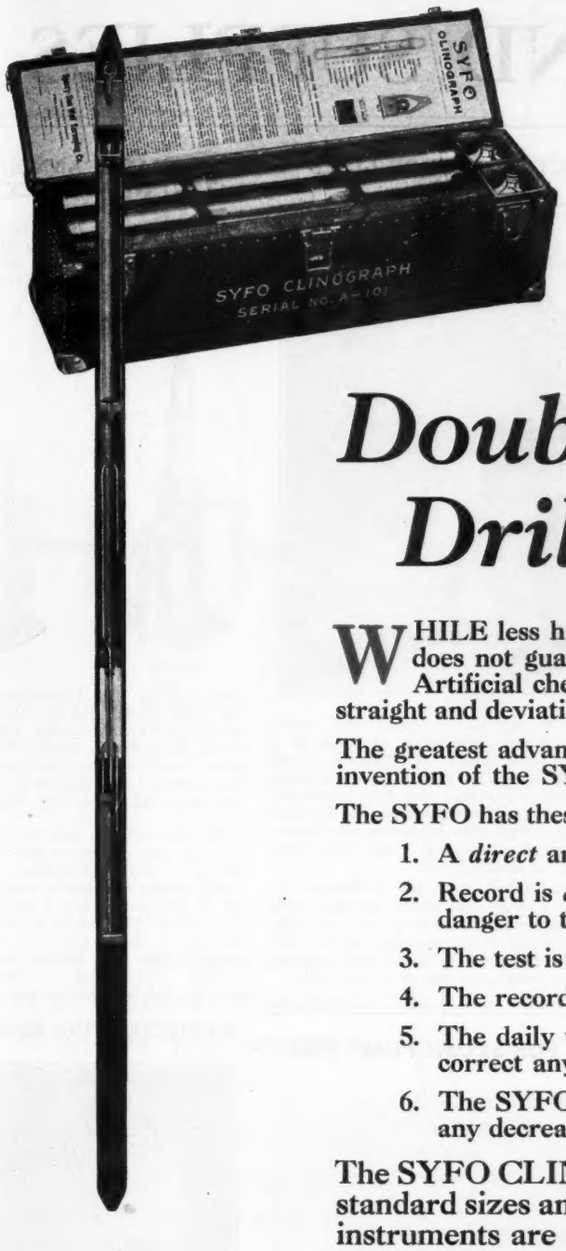
The gasoline motor is a 1 horsepower, single cylinder, air-cooled Briggs & Stratton motor. It is the regular 4-cycle type and has a 2¼-inch bore and 2¼-inch stroke. It is equipped with a high tension magneto and uses standard motorcycle spark plugs. An easily operated hand starter is standard equipment and an Eclipse motorcycle clutch is provided. The motor is connected to the Power Boy with a roller chain.

The new Power Boy with gasoline engine drive will thread and cut pipe up to 2 inches without the auxiliary drive. With the auxiliary drive it can be used for pipe up to 4 inches.

METER SALESMEN ATTEND WATER WORKS CONVENTION

W. F. Rockwell, president of the Pittsburgh Equitable Meter Co., Pittsburgh, Pa., took advantage of the fact that a salesmen's meeting could be held in conjunction with the annual convention of the American Water Works Association in St. Louis, Mo. and he made it the occasion for an assembling of the men who represent the company in the field.

Many interesting subjects were discussed at the meeting. Mr. Rockwell expressed satisfaction as to the sales for the first part of 1930, and stated that they were ahead of last year's. Several members of this company who attended the convention were on duty at the exhibit and thus do not appear in the picture.



ELIMINATE CROOKED HOLES

Double Check Your Drilling Progress

WHILE less haste seems to be the order of the day in drilling, that alone does not guarantee that the hole is headed in a true vertical direction. Artificial checks must be employed to make sure that the hole is truly straight and deviation from the vertical can then be rectified.

The greatest advancement in well surveying has been made possible by the invention of the SYFO CLINOGRAPH (Patents pending).

The SYFO has these outstanding advantages.

1. A *direct* and *accurate record* of the vertical inclination.
2. Record is *easily* obtained, without the use of acids, with their danger to the operator.
3. The test is *quickly* made.
4. The record is made *on paper* which can be *filed* for reference.
5. The daily use of the SYFO enables the driller to *immediately* correct any deviation from the vertical.
6. The SYFO is *extremely durable* and will last for years without any decrease in efficiency.

The SYFO CLINOGRAPH is not sold. It is furnished in two standard sizes and may be leased at nominal rates. Many SYFO instruments are already in daily use. In fact SYFO has proved so satisfactory that some producers when writing into their drilling contracts fixed limits from the vertical, use the SYFO test record sheets as evidence before accepting the completed well.

Send for a copy of SYFO CLINOGRAPH Catalogue.

SYFO CLINOGRAPH

SPERRY-SUN WELL SURVEYING CO.

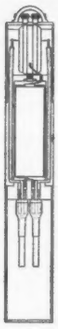
Main Office - 1608 Walnut Street

DALLAS PHILADELPHIA, PA. TULSA

EQUIPMENT AND SUPPLIES

PATENT IS GRANTED ON WELL-SHOOTING DEVICE

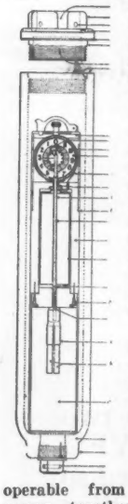
The Zero Hour Torpedo Co., Tulsa, announces that a patent was granted on June 17, 1930, to Jesse A. Morrison, of Salt Creek, and Eugene T. Williams of Casper, Wyo., and assigned to William J. Cheley, of Tulsa, for a well-shooting device that covers not only the features embodied in the Zero Hour electric bomb, but also the present method used in shooting wells with bombs.



Application for this patent was made September 15, 1923, and its issuance from the patent office is considered of importance by the owners of the assignment because practically all original claims were allowed.

Claims 6 and 7 quoted below were awarded by the board of appeals of the United States Patent Office only after having passed through strongly contested interference proceedings lasting for several years. This award was later confirmed by the United States Court of Customs and Patent Appeals of Washington, D. C.

Claim No. 6—"In a well-shooting device, in combination an exploding unit comprising a casing having a self-contained time controlling means, and an associated initial exploder, said unit being water tight and adapted to be preset in relation to the time controlling unit to set off the initial exploder whenever desired, and a main sand shattering exploder external to said shell and its self-contained features, and adapted to be operated by the explosion of the initial exploder within the shell."



Claim No. 7—"In a well-shooting device, in combination, an exploding unit consisting of a shell of water-tight construction, a time controlling means within said shell, and an initial exploder in said shell operable from said time controlling means, together with a main exploder external to the shell and adapted to be exploded by the initial exploder within the shell."

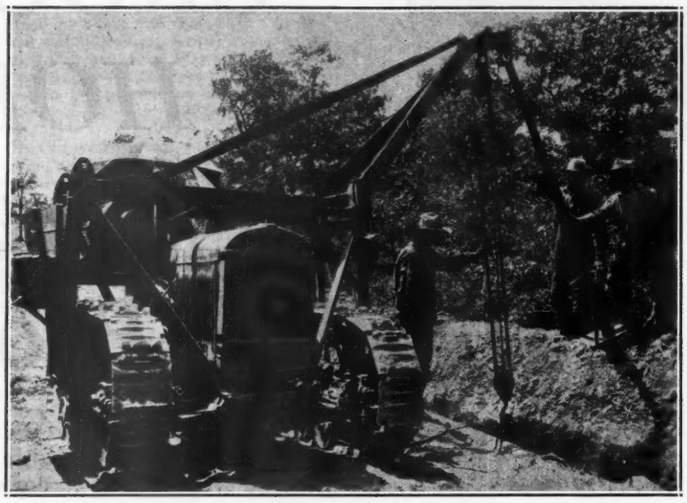
Zero Hour bombs as now made are well known to the oil industry and are the result of six years of continuous development and improvement work on the part of the manufacturers. They are quite generally used in many oil fields, particularly those of the Mid-Continent and Rocky Mountain areas, where the shooting of wells is a well-established practice.

Limited licenses are being granted to two manufacturers of purely mechanical bombs to operate under this patent, which is No. 1,764,222.

SMALL CAPACITY MANIFOLDS

To furnish small users of oxygen and acetylene with an economical means of gas distribution, Oxweld Acetylene Co., New York, has introduced two small capacity manifolds. Where it is necessary to have a number of welding stations and the consumption of gases is not large enough to warrant the installation of an acetylene generator and large oxygen manifold, these small manifolds will prove to be an effective means of having a piped supply of gases.

TRACTORS SPEED UP CONSTRUCTION OF PIPE LINES

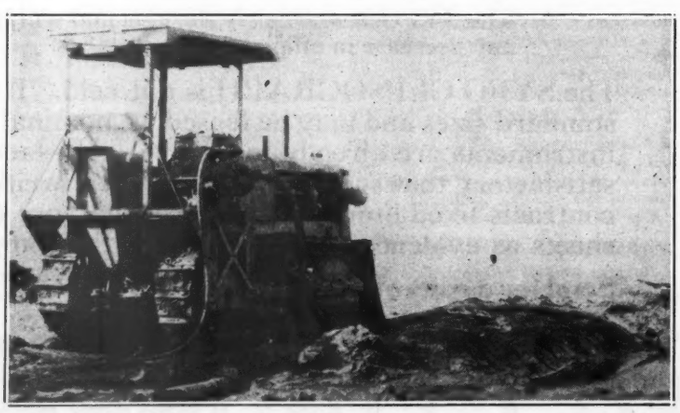


In addition to performing a variety of heavy hauling work, much of it in rough rocky, wooded or swampy country, powerful specially equipped tractors of the internal combustion type are being utilized increasingly to do special jobs in the big oil fields. Tractors have been playing a particularly spectacular role in speeding the construction of the thousands of miles of oil and gas pipe lines built in recent years for the efficient and low-cost, long-distance delivery of oil and gas from various producing fields.

In the accompanying illustration is shown one of these tractors, a McCormick-Deering unit equipped with crawlers and pipe line boom, at work in a rough, hilly section of Oklahoma laying a long section of 12-inch pipe consisting of several lengths that had previously been electrically welded on the location shown. This pipe is part of the Texas-Empire line running from Drumright, Okla., to Lockport, Ill.

Another oil field job performed by tractors of the type shown equipped with special winches is pulling rods and tubing. With tractor operated outfits, rods from wells 3,000 to 6,000 feet in depth can be pulled and run in a single day.

MONARCH 35 PROVIDES POWER FOR SLUSH PUMP TOO



By Elmer A. Braden

Special equipment engineer, Monarch Tractors division, Allis-Chalmers Manufacturing Co.

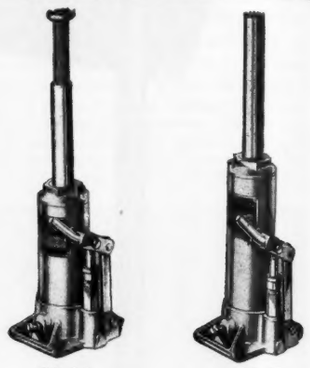
When used with a core drilling rig in the Mid-Continent oil fields, the Allis-Chalmers Monarch "35" also furnishes power to drive the slush pump. This is a new development which is attracting attention. The slush pump, mounted on the rear of the tractor, is driven from the power take-off by a silent chain drive inclosed in a dust-proof core. It runs in a bath of oil.

This installation in no way interferes with the tractor drawbar, which is left entirely accessible and permits use of the tractor for transporting the rig from one place to another, or for any other hauling which may be required.

The slush pump is a conventional two-cylinder pump, as used in the Mid-Continent Fields. The ability of the track type tractor to negotiate rough fields with ease makes this an ideal power unit for oil field exploration. A maximum of 41 horsepower at the drawbar in low gear gives the "35" ample power for transporting the drilling machine, tool wagon and other equipment over the roughest fields encountered. A wide tread model of the Monarch "35" is built for extremely rough, hilly fields, and a wide track model for swamp lands. Each model can be fitted with the same equipment.

BLACKHAWK ANNOUNCES TWO NEW TRUCK JACKS

Announcement of two Pacemaker jacks is made by the Blackhawk Manufacturing Co., Milwaukee, Wis., which has a complete line of 25 models from 1 to 75



BA 8.5 BA 10

tons capacity. The Pacemakers are 2½-ton jacks, Models BA 8.5 and BA 10, intended for Ford, Chevrolet, International, Dodge, Reo, Mack, White, Whippet and other speed wagons and light delivery trucks from 1 to 2½ tons capacity. They are fast-acting jacks, easy, safe and long-lived.

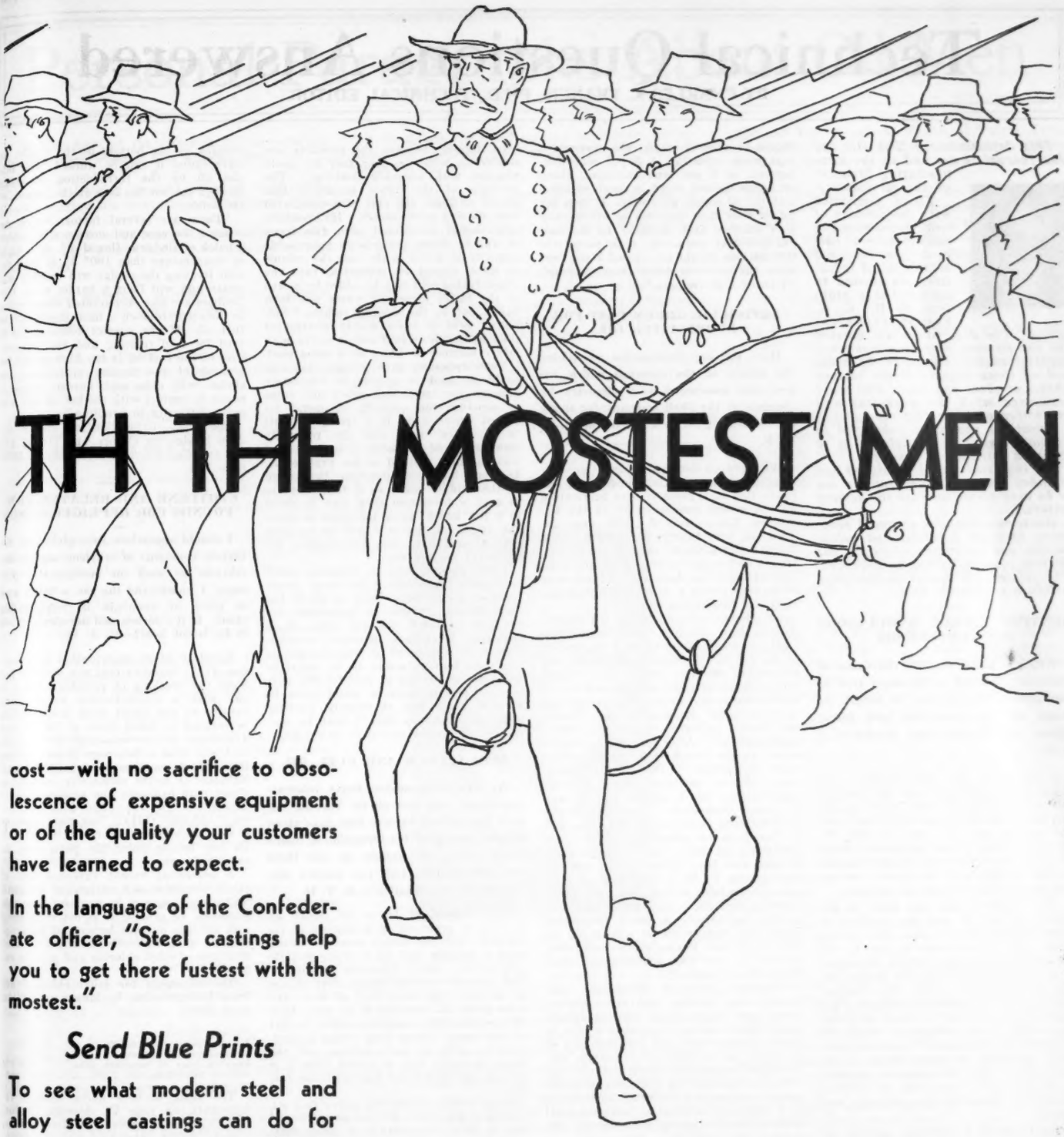
The base of each jack is 3 5/16"x5", sled type for easy placement and sturdy, sure footing on any road surface. The BA 8.5 is 8½ inches low, has a single hydraulic lift of 5½ inches and a hand extension of 3 inches. The BA 10 is 10 inches low and has a single lift of 7 inches. The head of the BA 10 is integral with plunger. Net weight of BA 8.5 is 15 pounds; BA 10, 16½ pounds.

REPRESENTING KEROTEST

Shep. F. Miers

Mr. Miers has been with the Kerotest Manufacturing Co., Pittsburgh, Pa., maker of valves and fittings, for several years in the capacity of sales engineer, covering Mid-Continent and Texas fields. Recently he has been spending most of his time in Oklahoma.

William Stringham, assistant general superintendent of the East works plant of the American Rolling Mill Co., Middletown, Ohio, since 1923, has been made assistant vice president.



TH THE MOSTEST MEN

cost—with no sacrifice to obsolescence of expensive equipment or of the quality your customers have learned to expect.

In the language of the Confederate officer, "Steel castings help you to get there fustest with the mostest."

Send Blue Prints

To see what modern steel and alloy steel castings can do for you, send blue prints of your most troublesome parts to Sivyer. There is no obligation, of course.

SIVYER STEEL

Milwaukee SIVYER STEEL CASTING COMPANY *Chicago*

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

HUNTING EFFECT REGULATORS AND GOVERNORS

Will you please explain the cause of "hunting" observed in the usual type of regulators? This applies, of course, to steam and gas regulators both downstream and back-pressure regulators.—L. D. T.

A control of the fuel supply to an engine is required to meet the varying conditions of load; if there is not enough fuel the engine will gradually slow down and possibly come to a stop, or when the load is removed it may speed up to such an extent as to wreck it. The device used for the regulation of the speed of an engine is called a regulator or governor.

Any device of this sort must be designed so that it will be sensitive to speed changes with no more than a very small degree of resistance so that it will act on the control lever within the period of safety; that is, before the engine has attained a dangerous speed. This internal resistance of the governor produces a lag which may be given a numerical value represented by the proportion which the change in speed required to produce adequate governor movement bears to the total speed. This lag must be as small as possible and a safe value of 1/100 is considered reasonable for ordinary purposes.

The effort of a governor, possibly the sensitiveness, as evidenced by the constant changing of the weight in order to find the exact speed level is known as "hunting." The direction of the governor is always with the speed, so it may go beyond, or overshoot, to a point where the engine will produce another governor action in the opposite direction. There are many conditions which have a bearing; these include the engine itself, including size of the flywheel, and the construction of the governor.

Morrison in his book, "Diesel Engines," page 351, says on this subject: "Much depends upon the effort which must be exerted on the fuel-pump mechanism to bring it from its minimum pumping position to its maximum position. Since a large change in engine speed gives the governor a maximum force to exert on the pump, it follows that the greatest permissible fluctuation in engine speed should be adopted to give the governor a high work capacity. A 3 per cent fluctuation, or 3 per cent variation, above or below normal speed is quite satisfactory for oil engine governing. It does not follow that this variation occurs on any save extreme load changes. In the load changes that ordinarily take place, the fluctuations should not exceed 1 per cent since the governor-sleeve travel is small on small load changes."

ARTIFICIAL GREEN CAST FOR LUBRICATING OIL

Have you any information concerning the nature of the chemical which has just been announced as a discovery by chemists of the Shell company for treating lubricating oil to a green color?—R. N. E.

We have no detailed information covering a special treating process for the production of a green colored lubricating oil. A recent announcement in the Petroleum Times, July 5, 1930, page 28, describes, very briefly; some work of the Royal Dutch-Shell chemists at The Hague and a part of this may give some idea of what has been done in the way of manufacturing a suitable coloring material for lubricating oils.

"A. Homer had obtained a red colored hydrocarbon, having the composition $C_{28}H_{22}$ in small quantity as a by-product of the reaction between naphthalene and aluminum chloride, which he termed tetra-methyl-erythrene and regarded as a naphthanthracene derivative; subsequent spectroscopical examination by Homer and Purvis indicated that it was tetramethyl-picene. After numerous experiments in the Royal Dutch-Shell laboratories this product of the action of aluminum chloride, on naphthalene—at high temperature, for a certain period, and in proper proportion— is now obtained in technically satisfactory quantities, and is found to be admirably adapted for producing the desired green fluorescence. It has also been more closely studied, and proves to be a hydrocarbon compound containing a di-methyl-crackene or naphthanthracene derivative, but no picene derivative. A small proportion brings the appearance of lubricating oil up to the best Pennsylvanian standard, without in any way affecting the other properties of the oil.

"Another group of fluorescent compounds, the acridine and azine derivatives, were suggested as coloring agents, but acridine and acridone have a blue to violet fluorescence, and are therefore of as little use as chrysene, fluorene, etc. Di-methyl-naphth-eurhodine, discovered by Witt and described by Plotnikov as an instructive example of changing fluorescence, is a substance soluble in lubricating oil with a beautiful green fluorescence. The typical Pennsylvanian fluorescence is not quite attained, but the compound is undoubtedly useful for shading."

ACID IN FISHING JOBS

The use of acid has been suggested for freeing tools or other material when frozen in a drilling well. What acids, and strength, are suitable for this work? —A. C. G.

Acid has been used with varying success for assisting in fishing jobs to dislodge parts of the drilling tools. We had personal experience with the use of acid for this purpose some 10 or 12 years ago where a string of tools were firmly held in a limestone formation.

The common acids, sulphuric and hydrochloric, are best suited and are quite generally available. Probably hydrochloric acid will usually give better results largely because the products are soluble in water so they may be easily removed with adequate flushing. The strength of the dilute sulphuric acid should be about one part of concentrated acid to five parts water. Hydrochloric acid should be diluted with two parts of water. When there is an appreciable quantity of water in the hole the volume of water should be estimated, then the concentrated acid may be added by means of the bailer after the water has been bailed out to the desired volume. Sulphuric acid is more widely distributed than hydrochloric acid and is active with larger volumes of water so if often used.

Some operators have thought that acid could be used in a hole to completely dissolve the metal but when one stops to consider the quantity of metal involved where there is a string of tools to be acted upon and the relatively slow action of the acid, it is clear that this chemical method is not practicable. In some forms of limestone the action of the acid is rapid so if the tools are in such a formation they may be freed in a few hours but if the stone is dense the action of the acid will be so slow that several days may be required for sufficient penetration.

Little success may be expected under conditions where there are large quantities of water, dense mud, or oil in the hole, because it will be impossible for the acid to reach the spot where it is required. There are numerous possibilities to be considered so when conditions are such that it seems to be desirable to resort to the use of acid for the purpose of freeing tools or metal parts in a well, an expert thoroughly familiar with the chemistry that it may be necessary to consider should be in charge.

ACID SLUDGE AND FUEL OIL

We have been mixing heavy lubricating sludge with fuel oil for burning but have had several batches that have given trouble because of the formation of lumps which cannot be broken up and these clog the burners. Can you suggest any remedy for the situation?—E. T. D.

The disposal of heavy oil sludge by burning is practiced in a number of refineries; but the sludge must be mixed with a suitable fuel oil in quite definite proportions under favorable conditions. The quantity of the sludge that should be blended with heavy fuel oil may vary from about 25 per cent to no more than 50 per cent. The smaller quantity is that of the heavy sludge that shows a tendency to settle in hard masses, and the larger quantity may be mixed when it is smooth and will blend well with the fuel oil.

Some refiners bring the heavy fuel oil, having a gravity A.P.I. between 10 and 15, up to a temperature of about 200/225° F. and set the charge in motion by means of paddles or air, then very slowly add the proper quantity of sludge. If the sludge is run into the fuel oil too rapidly it will settle and form into large lumps that are difficult or almost impossible to separate. The same thing may happen when the fuel oil has not been heated to high enough temperature.

Several suggestions concerning the utilization of acid sludge for fuel may be found in the article Making Acid Sludge Fit for Plant Fuel, by L. W. Barbour, The Oil and Gas Journal, December 6, 1928, page 242, from which the following is quoted:

"Occasionally we have difficulty in breaking up the sludge with the use of air alone. In such cases we have found that by shutting off the air and introducing steam instead, the condition can be overcome.

"If by chance the sludge should begin settling to the bottom of the kettle, we have found it can be worked back into the oil by the introduction of steam through the suction line at the bottom of the kettle.

"There are several factors which determine the ease and success with which a batch of sludge is fluxed off. If a higher temperature than 160° F. is used for acid treating the sludge will be hard and gritty and will form a harder coke. Difficulties are also encountered when trying to disintegrate such a hard sludge in the fuel oil. If the correct temperature is used for acid treating and the temperature of the fuel oil is too high at the beginning of the fluxing operations, the sludge will coke and harden when it comes in contact with the hot oil and will cause difficulty in handling."

See also "Utilization of Heavy Oil Acid Sludge, by Osborn and Davis, The Oil and Gas Journal, December 6, 1928, page 140.

ETHYLENE AND RELATED COMPOUNDS FOR REFRIGERATING

I should appreciate your giving me the various constants of ethylene and/or diethylene as used for refrigerative purposes. I understand the gas is being used in place of ammonia in refrigerating plants. Is it colorless and harmless? What is its latent heat?—R. J. W.

Ethylene is an unsaturated hydrocarbon, C_2H_4, found in coal gas and the gas from the cracking of petroleum. It is a gas with a characteristic sweet odor, density in the liquid form 0.566, which is reduced to liquid form at 10° C. and a pressure of approximately 870 pounds. It burns with a luminous flame, making it a valued constituent of artificial gas. Ethylene is active chemically, combining direct with hydrogen and numerous other substances. The compound with chlorine, ethyl chloride C_2H_5Cl, has been used as a local anesthetic in surgery; because of its low boiling point the parts may be rapidly frozen.

A somewhat recent extended use of ethyl chloride is as a refrigerant for small units, such as may be used for domestic purposes. In general it is not considered safe for this purpose because of its property as a mild anesthetic and also that mixtures of ethyl chloride and air are explosive.

The constants for ethyl chloride are from Refrigeration, by Moyer and Fittz, page 409

Density of liquid	0.9232
Boiling point degrees F.	55.6
Critical temp., degrees F.	361
Specific heat of constant pres.	0.273
Latent heat-B.t.u./lb.	165

The same authors under special refrigerants, on page 79, describe dieline, $C_2H_4Cl_2$, with the properties listed below.

Standard ton temperatures	5°F.	86°F.
Absolute pressure lbs./sq. in.	0.82	6.9
Volume of liquid cu. ft./lb.	0.0127	
Volume of vapor cu. ft./lb.	63.00	8.5
Latent heat of evaporation, B.t.u./lb.	136	133
Specific heat of liquid	0.270	
Specific heat of vapor, constant pressure	0.1625	
Specific heat of vapor, constant volume	0.1425	
Specific gravity liquid	1.27	
Specific gravity of vapor	3.36	
Critical temperature, °F.	470	

Ethyl chloride cannot be considered a harmless substance. As already mentioned it will act as an anesthetic, when mixed with air, and will form explosive mixtures. It does not have any corrosive action on the metals but is a solvent for greases and lubricating oils so some lubricant such as glycerin must be used in its presence.

Personal Paragraphs About Oil Men

H. E. Rathrock, of the Superior Oil Corporation, Tulsa, has been visiting San Antonio, Tex.

* * *

Charles F. Urschel, brother-in-law of T. B. Slick, is looking after his interests in Southwest Texas.

* * *

George Snider is in charge of the offices which the Darby Petroleum Company has opened in San Antonio, Tex.

* * *

A. B. Judd, secretary, Republic Supply Company, is making a tour of branch stores in Texas and Oklahoma City.

* * *

Carl Beroth, president of the Acme Petroleum Company, has returned to Chicago after a two months' trip to Europe.

* * *

W. W. McCarty, of the Pandem Oil Corporation, has returned to Wichita Falls, Tex., from a business trip at Oklahoma City, Okla.

* * *

L. A. Kline, traffic manager of the Simms Oil Company, Dallas, Tex., is again back on the job after spending some time in the hospital.

* * *

L. A. Halsey, manager of the Exner Dodge Packer Company, Coffeyville, Kans., and wife, have been enjoying a vacation at Carlsbad, N. Mex.

* * *

Ellis Hall, in the geological department of the Atlantic Oil Producing Company, San Angelo, Tex., has returned from a vacation trip to Monroe, La.

* * *

John A. Fryer, petroleum engineer for the Cardinal Oil Corporation, Tulsa, has gone to Princeton, Ind., where the company is beginning to develop holdings.

* * *

H. E. Rathrock, from the Tulsa office of the Superior Oil Corporation, has been in San Antonio, Tex., recently on business at the office of the company there.

* * *

A. M. Donoghue, Houston, Tex., vice president of the Texas Pipe Line Company, spent several days in Oklahoma, including in his itinerary the Oklahoma City Field.

* * *

C. W. Murchison has resigned as president of the Southern Union Gas Company of Dallas, Tex. His brother, T. F. Murchison, will probably become chairman of the board.

* * *

Kenneth D. Pardee, district superintendent of the Texas Production Company, Montana and Wyoming, has been passing out the cigars recently—a son born July 15 at Billings, Mont.

* * *

Robert R. Hawkins, engineer for the production department of The Texas Company, Tulsa, spent his vacation with his family in the Ozark Mountains of Arkansas, returning July 28.

* * *

J. B. Arthur, manager of asphalt and fuel oil sales for the Union Oil Company of California, has been in the Orient for several weeks preparatory to the Union Oil Company's entry into that market.

* * *

Stewart Mossom, for the past four years with the Ohio Oil Company in East Texas, has been appointed district geologist for the Lion Oil Refining Company in Southwest Texas to work out of the San Antonio office.

* * *

J. C. Jeffrey and Hugh Andres, of the geological department of the Sinclair Oil & Gas Company, San Angelo, Tex., are both on their vacations. Mr. Jeffrey went to Eureka, Okla., and Mr. Andres to Stratford, Okla.

* * *

I. W. Alcorn, petroleum engineer of the Independent Oil & Gas Company, Tulsa, just returned from Fort Worth and North Central Texas, where he has been making an inspection of the company's properties in the New Castle Pool in Young County. Mrs. Alcorn accompanied him as far as Fort Worth.

S. H. Casteel, of the Landreth Production Corporation, has recently been on a visit to Southwest Texas.

* * *

Herbert Wilson, Jr., assistant to the treasurer of the Atlantic Pacific & Gulf Company, visited the local offices and refinery at Wichita Falls, Tex., during his vacation.

* * *

D. M. Cashin, chief geologist of the Navarro Oil Company, Houston, Tex., has resigned to become associated in the same capacity with the Warner-Quinlan Company of Texas, which has just moved its offices from Dallas to Houston.

* * *

W. C. Davis, district land man for the Shell Petroleum Corporation, and family are spending their vacation in their former home at Shreveport, La. On the trip they drove to Laredo, Brownsville, Galveston, Tex., and Monterrey, Mexico.

Men in the Industry

W. H. Ferguson

W. H. Ferguson, executive vice president of the Continental Oil Company, entered the oil business through the channels of a law practice. He went to Colorado in 1908 and from 1910 to 1922 was a member of the law firm of Smith, Brock & Ferguson of Denver. This firm represented the Continental Oil Company and the interests of other oil companies, principally members of the Standard Oil group. Mr. Ferguson devoted an increasing amount of time to the oil business from 1912 on and practically all of his time since 1920. In that year he was elected president of the Continental Oil Producing Company, producing subsidiary of the Continental. He retired in 1922 from his law firm to become general counsel for and a director of the Continental Oil Company, continuing as president of the producing subsidiary. In 1924, upon the merger of the Continental Oil Company and the Mutual Oil Company, he became executive vice president of the merged companies and continued in that capacity after the merger of the Continental and Marland companies. His headquarters are in Denver.

Mr. Ferguson was born in Pittsburgh, Pa., in 1884. He is a graduate of Washington and Jefferson College and of the University of Denver law school. When the old Continental Oil Company of Maine and the Marland Oil Company were merged into the new Continental Oil Company of Delaware, recognition was accorded his demonstrated ability and he was made executive vice president and placed in general charge of that company's business in the Rocky Mountain area, in California and in Canada.

Mr. and Mrs. George W. Brake, of Talara, Peru, are spending their vacation in British Columbia and the Pacific states.

* * *

Garrett Boone, land man of the Barnsdall Oil Company, has been transferred from San Antonio to Amarillo, Tex., D. P. Dean, district geologist, transferred from Midland, and R. C. Lamb, also of the geological department from the Wichita Falls office.

* * *

P. M. Miskell, general manager of the refining and marketing divisions of the Empire Oil & Refining Company, Tulsa, accompanied by Mrs. Miskell, left New York July 23 on the Mauretania. They will be gone several weeks visiting European points.

* * *

Frank Brainerd has been moved from the Wichita Falls, Tex., office of the Empire Gas & Fuel Company to become district geologist at San Angelo, Tex., for the same company. He has held the same position with the company for seven years at Wichita Falls.

* * *

T. C. Skeen, executive for the Columbian Steel Tank Company, has been making the rounds of the Mid-Continent area including Hobbs, N. Mex., in the interest of his company. He plans to take a vacation for the month of August along the shore of Lake Champlain, New York.

* * *

Sheldon Hardin has been re-elected president and director of the Southern Crude Oil Purchasing Company. W. R. Wheeler was re-elected vice president and director and John Campbell was re-elected secretary-treasurer and director. J. C. Tomlinson was re-elected assistant secretary.

* * *

E. F. Boehms, with the University of Texas lands geological staff at San Angelo, Tex., has returned from Hudspeth County where he spent six weeks with Bert R. Haigh, instructor in the School of Mines, El Paso, in mapping formations of the county. J. N. Gregory of the lands office at San Angelo has gone to Hudspeth County in exchange of places.

* * *

W. E. Pinckney, formerly located at the factory of Goulds Pumps, Inc., Seneca Falls, N. Y., has been transferred to Houston, Tex., as an addition to the sales engineering staff in the Houston territory. F. M. Esch, who has been on the staff at Houston, has been transferred to Tulsa, in the same capacity.

* * *

A. A. Goodman, assistant production superintendent of the Van Field, Van Zandt County, Texas, has been transferred to take charge of the Pure Oil Company's activities in the northeast extension to the field, and C. E. Dougherty has been transferred from the Nocona Field in North Texas to become assistant superintendent in the Van Field. L. E. Lewis is superintendent of the field.

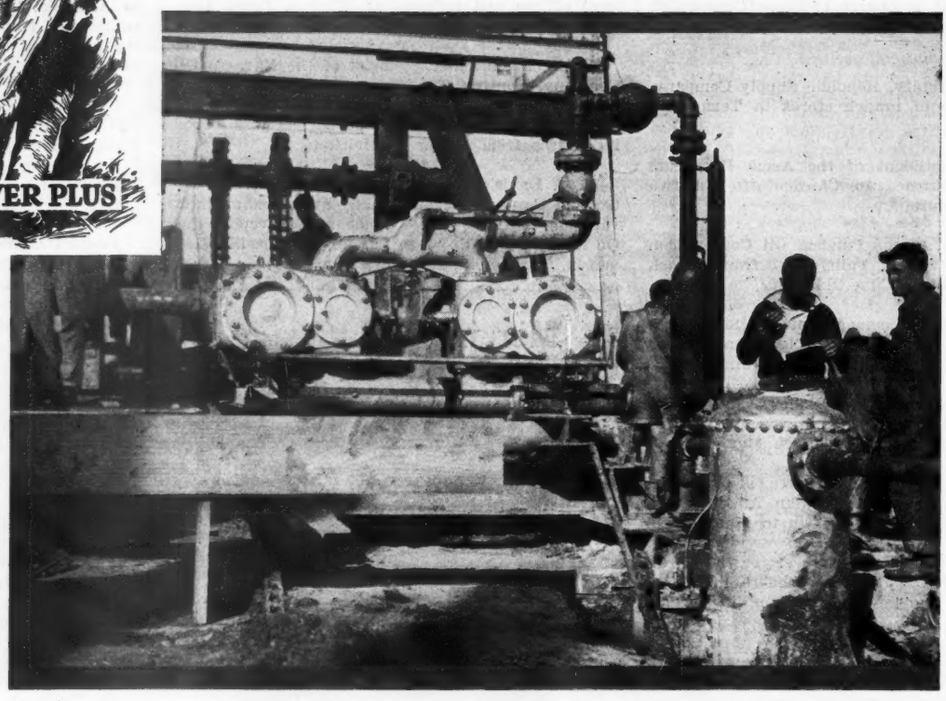
* * *

E. T. Kelley, district salesman for the oil industry division of the Philip Carey Company Houston, Tex., has been spending considerable time in Louisiana and Gulf Coast points in the interest of company business. Both Mr. Kelley and H. L. Dunham of the Houston office have a large acquaintance among the oil pipe line, producing and refining divisions, and the natural gas pipe line companies centering around Houston, Beaumont and Port Arthur.

* * *

H. C. Duncan is now traffic manager for the Indian Territory Illuminating Oil Company. For the past four years he has been in the service of the Missouri, Kansas & Texas Railway Company as chief clerk to the general freight agent at Kansas City, Mo. L. F. Runer, who resigned, has accepted a position with the Fort Smith & Western Railway Company. The new traffic manager has already taken up his duties in Bartlesville, Okla., and expects to move his family here from Kansas City in a few days. Mr. Runer, who has been with the company since 1927, will make his headquarters in Tulsa.

New Production Records in



New IDEAL-AJAX 12 x 12 Twin Roller Bearing Engine with extra heavy Steam Separator. Operated by Hemrich & Payne, Oklahoma City, Okla.

REPORTS from the field give new performance records for IDEAL-AJAX equipped with extra heavy steam separator.

You can secure detailed information from the National Supply Company man.

IDEAL-AJAX

ROLLER BEARING

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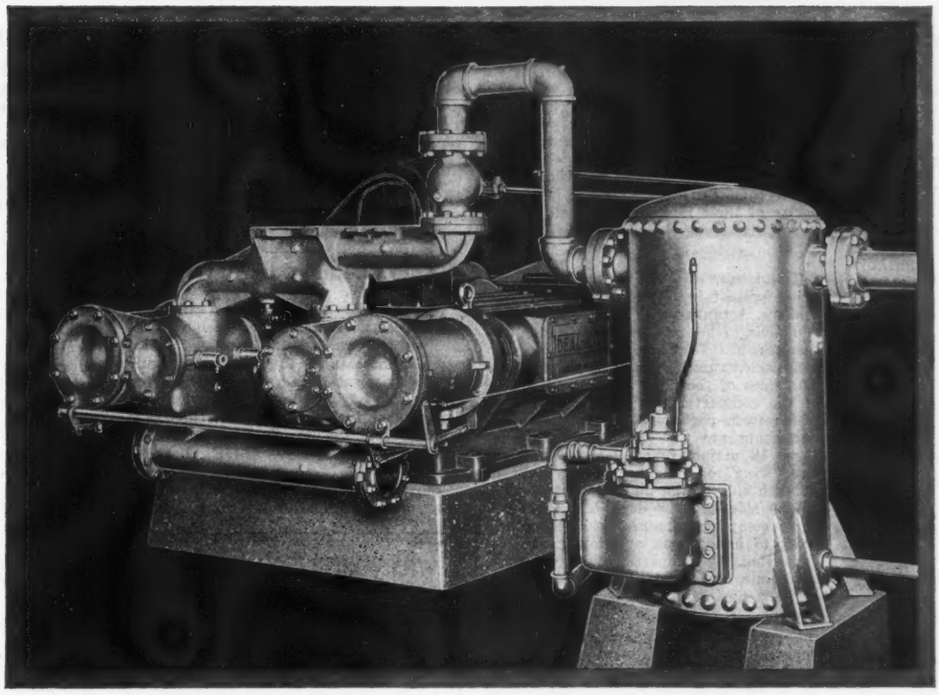
Oklahoma With IDEAL-AJAX



THE first steam separators used in the oil fields were developed by AJAX to speed up operations with IDEAL-AJAX piston valve roller bearing engines.

All other AJAX and IDEAL-AJAX engines in the field not equipped with roller bearings are of the slide valve type. It has been found that these engines also show improved performance by hooking up the extra heavy separator. It relieves the engine of forcing water back thru the valves and insures better lubrication because water is not present to wash sides of cylinder walls and valve seats.

Ask your National Supply Company man about equipping your engines with the extra heavy steam separator.

Made by AJAX IRON WORKS, Corry, Pa.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions only initials will be published in cononly initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

SCRUBBING NATURAL GAS

What is meant by "scrubbing" natural gas? And what is the process, please?—T. S. T.

In the natural gas industry the term "scrubbing" refers to the process of removing foreign matter from the gas by the use of specially made tanks. In one form of tank, liquids or dirt settle to the bottom. In another, the liquids or solid particles are removed by some type of filter.

The scrubber ordinarily is a vertical tank ranging in size from 3 feet in diameter and 6 feet in height to 6 feet in diameter and 20 feet in height. The pipe introducing the gas passes through the wall of the tank near the bottom. The end of this inlet pipe is curved downward or is equipped with a baffle so that as the gas leaves the pipe it is directed toward the center of the tank bottom. The gas moves slowly upward through the tank and as it does so any particles of dirt or liquid drop to the bottom. The condensate and sediment which accumulate at the bottom of the tank are removed by a drain.

The filter type of scrubber is like the other in size and shape, but it is provided with partitions placed across the tank horizontally and on these partitions are filtering materials such as hay, sponge or moss. Where hay or moss are used, the material is removed and burned after it becomes impregnated with moisture and dirt. If sponge is employed, this is taken out and cleaned, then replaced.

Scrubbers of some type should be installed, in all pipe lines ahead of meters and compressors. Besides cleaning the gas they serve also as intake receivers for compressors, one tank being used on the intake of each machine or else a tank of correspondingly large capacity for the whole plant intake.

TANKER DANGERS LESSENED

It seems to me that in transporting oil in tank steamers there must be a certain amount of danger from the increased tendency to roll to one side or the other or to pitch forward or backward as a result of the oil surging about, especially in time of storm. Is any provision made to overcome this danger? What is the capacity of these tankers? Can you tell me something about their construction?—O. S. T.

The danger of which you speak is provided against in the construction of the tankers. A tanker with a capacity of 80,000 bbls. (the size most commonly in service) has 18 compartments, nine on each side, running from bow to stern. The sides of the boat are the outer wall of the compartments and the bulkheads which form partitions between the compartments are the other walls. Besides these 18 major compartments there are five "wing" or "summer" tanks built in on each side of the hull, along the angle of the side and the deck. These smaller extra compartments are designed principally to handle any overflow caused by expansion. All compartments except these small ones are provided with steam coils, as in steam coil tank cars.

This method of dividing the ship's tank into compartments permits loading in such a way as to keep the boat on an even keel and prevent shifting of the oil in waves from one side or one end to the other. The compartments also make it possible to shift a boat's cargo after it has put to sea as exigencies may direct. Each tanker is equipped with pumps by which oil can be moved from one compartment to another, one side to another, or from stern to bow. This often has to be done during storms which cause the ship to list to one side or the other. This kind of construction has the further advantage of minimizing losses from leakage or collision, since the results of a leak or a damaged compartment can be localized.

Tankers range in capacity from 65,000 to 135,000 bbls., but there are few which have less than 80,000 bbls. capacity, as competition usually makes it unprofitable to operate a smaller ship. The tankers are 480 to 500 feet long with beam of 75 feet or more.

GOING FOR THEM PERSONALLY

What truth is there in stories that are told about men being lowered into an oil well hole to fasten a chain to tools lost in the hole or are these yarns on a par with that one about the shell of nitroglycerin that was blown up through the derrick and then caught like a baseball when it came down? It might be possible to lower a man a short distance into a hole of big diameter, but stories of a man going down 200 feet tax my credulity.—S. H. T.

Not knowing just what stories you may have been told, this department is unable to express any opinion as to their accuracy. It seems to be well authenticated, however, that perilous descents into well holes have been made on various occasions to recover lost tools. When a well of the Midwest Exploration Co. in Lincoln County, Wyoming, on the Waterfall Dome, was bottomed at 225 feet in the summer of 1928, Rex Barclay, a tool-dresser, was lowered to the bottom of the hole, 19 inches in diameter, in an effort to attach a chain to a swedge. He failed in his first effort, but made the descent a second time and was successful. Barclay carried with him a flashlight and an apparatus which enabled him to signal to the men on the derrick floor.

The statement that this was the greatest depth to which any man ever descended into an oil well is disputed. Two men whose names are not given are reported to have been lowered successively 300 feet into the Parker Club's well in Colorado and to have attached chains to lost tools. In this case, however, there was more room in which to work as there was a large cavity at the bottom.

SUCKER-ROD INFORMATION

Are you able to tell me the estimated number of wells abandoned each year as a result of sucker-rod breakage? Also can you indicate the approximate amount of money spent each year in fishing for sucker-rods? Is this work let out by contract? Are tools for doing it rented? Is trouble from sucker-rods as serious now as it was in former years?—E. U. E.

Sucker-rod troubles have little or no connection with the abandonment of wells. Wells are abandoned because they cannot be operated at a profit. The subject of sucker-rod troubles is treated at length in a paper delivered before the Petroleum Division of the American Institute of Mining and Metallurgical Engineers by M. J. Kirwan and K. A. Covell. This paper, entitled "Pumping Deep Wells in the Seminole Field," is published in the "Petroleum Development and Technology Transactions" for 1928-29 and a copy may be obtained for $5 from the office of the institute, 29 West Thirty-ninth Street, New York.

The job of fishing for sucker-rods usually is done by the regular lease gang and as a rule the tools required for it are a part of the lease equipment. Thus there is little contract work of this sort, few tools are rented and it would be virtually impossible to do more than make a wild guess at the amount of money spent annually in sucker-rod fishing jobs.

Sucker-rod troubles are not as serious as they were in former years. Manufacturers have improved their product and have studied the causes of breakage so thoroughly that in those cases where troubles of this kind appear with unusual frequency they often are able to detect the reason and the remedy for it. If a well is shut down too often from rod breakages one of two things is likely to occur. Either the man in charge of the lease finds a way to stop it or the owners of the property find a man who can stop it.

With the various types of dynamometers now employed to weigh wells and the mastery of difficult pumping problems, wells as a rule can be properly balanced to keep rod troubles to a minimum.

WHY WAS IT CALLED THAT?

FLASHBACK

Sometimes in the process of welding the torch flame darts back into the mixing chamber or acetylene passage of the torch. In other words, it flashes back, and "flashback" quickly came into use to describe the accident, which is accompanied by a hissing or squealing noise and a smoky, sharp-pointed flame of small volume. When a flashback occurs, the gas supply must be cut off immediately to prevent excessive heating and possible destruction of the torch head.

SURFACE TENSION

In several recent articles in The Oil and Gas Journal the term "surface tension" is used. I haven't been able to get hold of anything that explains just what this means. May I bother you to tell me?—T. L. N.

There exists in the surface film of oil, water and all other liquids a property which, owing to molecular forces, tends to bring the contained volume of the liquid into a form having the least superficial area. This property is called surface tension. The thickness of the surface film is less than one-thousandth of a millimeter and it is regarded as equaling the radius of the sphere of molecular action; that, is the greatest distance at which there is cohesion between two particles. Particles lying below this film, being acted on equally from all sides, are in equilibrium as to forces of cohesion, but those in the film itself, generally speaking, are attracted inward, with the result that tension is produced.

As used in the flotation process surface tension is the contractile force at the surface of a liquid by which resistance is offered to rupture. In his book on "Production of Oil, Gas and Water," Dr. Stanley C. Herold says:

"All liquids display a surface tension at their free surfaces in contact with gas or with an immiscible fluid. It may be said that the surface of a liquid behaves very much like a stretched membrane, except that an increase or decrease in the area of the liquid surface does not alter the surface tension, whereas a corresponding change in the area of a membrane does alter the tension. If we imagine a straight line drawn upon the surface of a liquid, then the portions on opposite sides of this line are pulled apart by a force which is specifically defined as the surface tension. This tension may be expressed in units of force per unit of length, and it is obvious that the direction and point of application of the force are on the surface of the liquid. The fact that the exposed layer of molecules are attracted by molecules of the same kind from one side only, whereas those within the mass of the liquid are attracted equally from all directions leads to many interesting phenomena respecting the physical properties of free liquid surfaces.

"One of the interesting phenomena due to surface tension largely, though not exclusively, is that of capillary action. When the free surface of the liquid is confined to a very small area the surface tension, combined with the forces of attraction or repulsion between molecules of liquid and those of solid matter defining the surface causes what is known as capillary attraction. The forces of attraction or repulsion between the two kinds of molecules are apparently due to preferential adsorption on the part of the solid surface. Glass, for instance, prefers water to air; on the other hand it prefers air to mercury. Indeed it may be incorrect to speak of a repulsion in any case."

KITE AND KENNEDY TESTS

Can you inform us where we may obtain an article or book on the Kite and Kennedy pipe line tests referred to in The Oil and Gas Journal of June 5, 1930, in the article by William G. Heltzel, on "Flow and Friction in Pipe Lines"?—W. J.

The experiments made by Kite and Kennedy are discussed in an article, "Flow of Fluids Through Commercial Pipe Lines," by R. H. Wilson, W. H. McAdams and M. Seltzer, in the Journal of Industrial and Engineering Chemistry for February, 1922.

Industry's Prospect Improving

By W. T. ANDERSON

The first half of 1930 was a period of substantial achievement for the oil industry. The remainder of the year should see consolidation of those gains and the establishment of the industry on a stable operating basis.

Crude oil producers reduced their production nearly 17,000,000 bbls. in the six months past and seem likely to cut their output 50,000,000 bbls. additional before the close of the year.

The refining branch, less consistent in its efforts, has finally effected a drastic reduction in crude runs to stills and entered the second half of the year with high hopes of keeping its crude runs down to requirements, thereby checking the unhealthy trend of the previous six months.

The experience of the industry since the first of January has conclusively confirmed the statement made in the Annual Number of The Oil and Gas Journal that it was imperative the production of crude oil during 1930 should be substantially less than for 1929.

It was recognized that it was necessary not only to bring about a balance between current supply and demand but that it was no less essential to reduce supply represented in overhanging stocks from the previous year.

The excess crude oil and refined production accumulated during 1929 were a serious threat to all markets before the end of that year. In the light of that situation, which was recognized by all, it is interesting to study the detailed data covering the operations of the industry during the first half of the year as shown in this Semiannual Number of The Oil and Gas Journal.

Turning first to the crude oil situation the producers, with very rare exceptions, have increasingly striven to keep down production to a sane limit.

The net decline in production for the six months, compared to the same period of last year, was 16,927,707 bbls. or an average of 93,500 bbls. daily for the period.

The decreases, it is noteworthy to remark, were in the big flush fields while what increases there were appeared in the older fields.

At present the daily average production in the United States is approximately 475,000 bbls. less than the peak.

This accomplishment is the more striking because it is shown that there was actual shut-in production, estimated on producing wells, amounting to 2,158,500 bbls. daily.

In other words, out of a potential daily production of 4,730,000 bbls. the industry produced but 2,571,500 bbls.

That measures the success of the curtailment movement which is today in effect in practically every field and will no doubt be continued because it is bringing the desired results and because the longer it is practiced the easier it becomes to apply it or extend it wherever occasion may arise.

With the production situation so well in hand and so actively supported by the industry it is not too much to predict that during the last half of the year crude production should be held at or under 2,500,000 bbls. daily.

Such a curtailment would mean a decrease of 58,000,000 barrels from the total for the same period of last year, and a reduction for the entire year of approximately 75,000,000 bbls.

If that program is realized oil men will have reason to congratulate themselves both on what they have accomplished and the perils they have thus avoided.

Besides the reduction in domestic production of crude there was also a reduction in imports and these together brought about a decrease in crude oil stocks from the total at the start of the year by approximately 1,500,000 bbls. at the end of May, the latest government figures available.

The situation in the refining branch was not so favorable. The refiners started the year with 10,000,000 bbls. more gasoline than they had at the same date the previous year, representing the accumulation of overproduction during several months.

It was agreed that this accumulation was topheavy and would be a constant threat to the markets as long as it continued. A great deal was said along this line and several refining organizations did all in their power to make the necessary curtailment through restrictions on plant operations to remedy the situation.

Some progress was made but the available data indicate that the refiners did not go far enough. By running too much crude to their stills they not only created an artificial market for crude oil which has since required further curtailment on the part of the producers, but they also made it impossible to correct conditions within the refining industry itself.

So far as gasoline is concerned the latest available government figures show that on June 1 the refining industry still had approximately 10,000,000 bbls. larger stocks than on the same date in the previous year.

In the first five months of the year the refiners ran to stills 396,910,000 bbls. of crude which was practically the same as in the like period of last year, although it was clearly indicated that less crude should have been run.

Their resulting unfavorable position was due to this and not to an unsatisfactory demand. The Bureau of Mines figures for the first five months show an increase of 16.7 per cent in exports and an increase of 9.2 per cent in domestic demand. This showed an over all increase in demand of 17,391,000 bbls. or 10.6 per cent which was really more than might have been expected in view of general business conditions during that period.

The uninformed may say that an industry which is having a 10 or 11 per cent increase in demand for its principal product should certainly be entitled to run at least as much raw material as in the previous year, but this contention overlooks the fact, previously mentioned, that we had a too heavy inventory of crude on hand and also overlooks the fact that every barrel of crude run to stills this year means a greater yield of gasoline due to greater refinery efficiency and increasing production of natural gasoline.

The gasoline yield from crude oil, based on refinery operations, has increased so that the average yield for the entire country is now more than 46 per cent or almost 20 gallons for each 42-gallon barrel of crude oil.

In one area the yield for the first part of the year was actually 27 gallons per barrel of crude, indicating what may be expected in other sections.

The true significance of this situation can be appreciated in observing the increased production of cracked gasoline and natural gasoline compared with the total increase in demand.

The increase in demand for the five months was 17,391,000 bbls.

The increase in the production of cracked gasoline was 12,630,000 bbls.

The increase in the production of natural gasoline was 1,519,000 bbls.

In other words the manufacturing branch of the oil industry furnished 14,149,000 bbls. additional without adding any more crude run to stills.

This was more than 80 per cent of the increase in total amount for gasoline.

That shows it would have been better for the refining industry and the entire industry if the cracking stills and natural gasoline plants had been allowed to furnish all of the increased production needed which would have meant less crude oil run to stills.

This would not only have benefited the gasoline market but would have aided the market situation on all other principal products which were also laboring under the curse of overproduction.

As the first six months approached a close it was apparent, however, that the situation was being realized by the refining industry generally along with the necessary remedy.

Available data late in the half year and since that time show that refiners are determined to correct conditions by making whatever reductions in operations are necessary.

While some have contended that this is too much like closing the door after the horse is stolen so far as 1930 is concerned it is not impossible continuance of the present policy will bring about favorable markets in the immediate future and bring the year to a close with satisfactory operations.

The reduction during the past two weeks will accomplish the desired purpose very speedily if continued. The lesson of the first half of 1930 is that the crude producer and refiner must work hand in hand in maintaining equilibrium in the industry. Failure by one to do this will nullify the efforts of the other.

It is absolutely necessary for the refiner to properly gauge his requirements and keep his crude runs within that need so the crude oil producer may have a sound basis and not an artificial basis to govern his own operations.

Looking over the past half year it is evident that this lesson is being learned and with the machinery established to maintain correct conditions the last half of the year can be viewed with optimism by the whole industry.

Initial Production Records Broken

First Half of 1930 Witnessed the Usual Field Activity, but Much Deeper Drilling and Many Notably Big Wells

By James McIntyre

It is safe to say that the 11,360 wells completed in the first half of 1930 represented more investment in money than all the completions in the same period in any past year. The number of wells brought in was 581 fewer than in the first half of last year, but they averaged deeper and they averaged a higher cost per well.

From a productive standpoint they exceeded all records in initial output in a six months' period. A total of 4,057,729 bbls. in initial production from the 6,718 oil wells completed averaged 604.01 bbls. to the well as against an average of 466.35 bbls. in the first half of last year and 541.18 bbls. in the first half of 1928. This initial production was actual production for the first 24 hours, which makes the initial production really greater than the record for the whole year 1928 much of which was made up of potential initial production of Yates County, Texas, wells which, as a matter of fact, did not flow more than an hour on their initial day.

It will be recalled that when a big well came in in the Yates Pool it was permitted to flow only a short time. Some of the wells made 350 to 400 bbls. the first 10 minutes and on the strength of this showing they would be computed as 50,000-bbl. producers or higher. This was purely a fictitious record. The crop of wells in the first half of 1930 were permitted to make their 24-hour gauge in all but a few instances and the big initial production record is Simon pure.

Big Initial Production Figures

In 35 districts in the United States the oil wells completed in the first half of the year averaged more than 500 bbls. in initial production. Oklahoma City, Okla., led all with 245 oil wells, 1,988,555 bbls. initial production, an average per well of 8,117 bbls., a marvelous record for an individual pool. Elwood, California, was second with 13 oil wells averaging 3,213 bbls. per well. Van, Texas, was third with an average of 2,615 bbls.; Sulphur, Louisiana, in the Gulf Coast Field, was fourth with an average of 2,584 bbls. per well.

In all the 35 fields 1,518 oil wells were completed with a total initial production of 3,486,620 bbls., or an average of 2,297 bbls. per well. In contrast, seven eastern states reported 2,654 completed oil wells in the first half with a total initial production of 38,089 bbls., an average of 14 bbls. per well. The balance of the country completed 2,546 oil wells with a total initial production of 533,020 bbls., an average of 209 bbls. per well.

Not Many New Pools

Not many pools were opened in the first half of this year, but the 1929 crop of new pools saw an intensive development. Leading all was the Oklahoma City Pool, where regardless of the fact that it was known they could not sell their product when they got it, oil companies drilled hundreds of wells at a cost of from $125,000 upwards per well. In June it was estimated that when the wells then drilling were completed a total of $200,000,000 would have been invested in the Oklahoma City Field, which would take a long time to get back.

There was little restriction on drilling. Companies, firms and individuals wildcatted or sought to extend pools and fields with almost the same enthusiasm they would have shown were there a demand for whatever production was obtained. There were some successful attempts at unitization as in the Van Pool in East Central Texas and a number of spots in Oklahoma and in those unitized fields there was no rush to get more unsalable oil as in Oklahoma City, Guadalupe County, Texas, Santa Fe Springs, California, and the Greater Seminole area in Oklahoma.

Texas Led in Drilling

The greatest number of wells completed can be credited to Texas, where in the shallow pools wells were started and finished in such quick time that scouts had trouble in getting a record of them. In all the fields of that State, 3,578 wells were completed, of which 1,843 were oil wells with a total initial production of 1,015,206 bbls. Dry holes numbered 1,504 and gas wells 231. Oklahoma was second in field work with 1,898 completions of which 1,173 were oil wells with an initial production of 2,470,015 bbls., an average of 2,105.73 bbls. per well; the dry holes were 534 in number, and there were 191 gas wells completed. The old Pennsylvania Grade oil fields of New York, Pennsylvania, southeastern Ohio and West Virginia completed 2,442 wells, with only 186 dry holes among them and with 296 gas wells to show that the once leading natural gas area was still alive. A total of 190 oil wells was completed in Central Ohio.

Very Active in Greater Seminole

The Greater Seminole area in Seminole and Pottawatomie Counties in Oklahoma where 525 wells were completed was easily the busiest area in Oklahoma. The business of developing the Konawa, East Earlsboro, South Earlsboro, East Little River, Wanette and Searight Pools, was the main cause of this. The South Earlsboro Pool and the Wanette Pool were discoveries of this year.

In the Gulf Coastal area the Refugio, Barbers Hill, Raccoon Bend and Pierce Junction Pools were particularly busy. More deep drilling was done in the Gulf Coast area, both in Texas and Louisiana, than in any similar period in the past.

In Southwest Texas the Darst Creek Pool was the feature field and Guadalupe County, in which Darst Creek is located, was the outstanding area in the way of development work with 196 completed wells. Darst Creek developed into one of the great major fields of the country but was not permitted to produce more than pipe line requirements.

The development of the Voshell and Ritz Pools in Kansas and exploratory work in Sedgwick and Greenwood Counties in an effort to find new pools, represented the largest amount of drilling in the Jayhawker State. Completions were recorded in 48 counties of Kansas, indicating the broad spread of operations. Much of this work was strictly wildcat. The central and western parts of the State were busier than in any similar period. The largest initial producer in Kansas in the first half of the year was

(Continued on Page 171)

SUMMARY OF COMPLETED WORK IN ALL THE FIELDS OF THE UNITED STATES IN FIRST SIX MONTHS OF 1930 AND IN SAME PERIOD OF 1929

	First 6 mos.	Comp.	Initial prod.	Dry holes	Gas wells	Oil wells	Av. in. prod. (bbls.)
Eastern	1930	2,442	12,391	186	296	1,960	6.32
	1929	2,495	11,987	199	312	1,984	6.04
Central Ohio	1930	582	9,178	158	234	190	48.30
	1929	609	5,180	182	249	178	29.10
Michigan	1930	151	15,773	54	9	88	179.24
	1929	248	79,867	63	17	168	475.40
Lima	1930	99	846	24	20	55	15.30
	1929	73	1,058	18	11	44	24.09
Indiana	1930	101	1,741	36	21	44	39.57
	1929	65	663	26	16	23	28.83
Kentucky	1930	551	11,810	166	47	338	34.94
	1929	616	15,635	198	33	385	40.61
Tennessee	1930	9	.....	0	9	...	....
	1929	6	120	2	0	4	30.00
Mississippi	1930	6	.....	4	2	...	....
	1929	16	.....	16	0	...	....
Alabama	1930	1	.....	1	0	...	....
	1929	1	.....	1	0	...	....
Illinois	1930	115	2,123	47	1	67	31.69
	1929	85	3,311	34	1	50	66.22
Kansas	1930	514	100,380	217	47	250	401.52
	1929	489	78,523	206	38	245	320.50
Oklahoma	1930	1,898	2,470,015	534	191	1,173	2,105.73
	1929	1,740	488,960	618	149	973	502.52
North Central Texas	1930	1,728	96,121	905	73	750	128.16
	1929	1,931	75,342	953	79	899	83.81
West Texas	1930	427	159,464	133	4	290	549.87
	1929	583	1,273,800	192	6	385	3,308.57
East Central Texas	1930	134	158,168	67	4	63	2,510.60
	1929	66	2,514	58	2	6	419.00
East Texas	1930	22	.....	3	19	...	.....
	1929	48	40	11	35	2	20.00
Texas Panhandle	1930	271	106,693	35	75	161	662.69
	1929	223	99,846	26	54	143	698.22
Gulf Coast	1930	672	265,293	232	22	418	634.67
	1929	782	258,222	306	14	462	558.94
Southwest Texas	1930	455	272,745	203	34	218	1,251.12
	1929	613	117,118	228	67	318	368.30
North Louisiana	1930	384	32,354	136	109	139	232.76
	1929	231	5,414	74	114	43	125.88
Arkansas	1930	74	2,298	41	4	29	79.24
	1929	137	15,255	70	13	54	282.5
Montana	1930	62	2,036	19	13	30	67.87
	1929	138	7,481	22	13	103	72.62
Wyoming	1930	56	8,296	10	5	41	202.34
	1929	39	9,870	8	1	30	329.00
Colorado	1930	26	560	16	2	8	70.00
	1929	46	4,464	22	1	23	194.06
New Mexico	1930	56	36,494	22	7	27	1,166.44
	1929	51	4,364	36	8	7	623.43
Utah	1930	2	.....	1	1	...	....
	1929	3	.....	3	0	...	....
California	1930	522	297,950	143		379	786.15
	1929	607	706,362	134	...	473	1,493.39
First 6 months	1930	11,360	4,057,729	3,393	1,249	6,718	604.01
First 6 months	1929	11,941	3,265,396	3,706	1,233	7,002	466.35
Difference		581	792,333	313	16	284	137.66
First 6 months	1928	10,455	3,113,947	3,428	1,273	5,754	541.18
First 6 months	1927	12,738	2,340,422	3,384	1,101	8,253	283.58
First 6 months	1926	12,995	1,317,432	3,644	1,087	8,264	157.86
First 6 months	1925	12,080	2,666,746	3,069	1,085	7,926	336.46
First 6 months	1924	10,940	1,707,093	2,457	1,114	7,369	231.66
First 6 months	1923	13,013	2,587,761	3,014	1,108	8,801	294.03

AMONG THE BIG WELLS

Areas in which completed oil wells averaged over 500 bbls. in initial production in first six months 1930:

	Comp. oil wells	Initial daily prod. bbls.	Av. in. prod. per well bbls.
Oklahoma City, Okla.	245	1,988,555	8,117
Elwood, Calif.	13	41,767	3,213
Van, Tex.	60	156,912	2,615
Sulphur, La.	6	15,505	2,584
Kettleman Hills, Calif.	4	8,913	2,228
Guadalupe County, Tex.	145	245,448	1,693
Bayou Bouillon, La.	1	1,680	1,680
High Island, Tex.	4	6,140	1,535
Ventura Ave., Calif.	23	31,526	1,371
Lea County, N. M.	24	31,347	1,307
Playa Del Rey, Calif.	8	10,243	1,280
Port Barre, La.	6	7,350	1,225
Seminole County, Okla.	307	369,476	1,204
North Dayton, Tex.	3	3,315	1,105
McPherson C'ty, Kans.	95	100,876	1,062
Humble, Tex.	36	37,659	1,046
Port Neches, Tex.	1	1,000	1,000
Rosecrans, Calif.	1	1,000	1,000
Orchard, Tex.	4	3,850	963
Barbers Hill, Tex.	56	53,606	957
Hankamer, Tex.	5	4,770	954
Santa Fe Springs, Calif.	129	117,457	911
Gray County, Tex.	104	93,946	903
Caldwell County, Tex.	14	12,173	870
Logan County, Okla.	8	6,657	832
Big Creek, Tex.	3	2,470	823
Bee County, Tex.	8	6,325	791
Vinton, La.	8	6,077	760
Jennings, La.	3	2,093	698
Potrero, Calif.	7	4,870	696
Midway-Sunset, Calif.	44	29,336	667
Esperson, Tex.	14	8,532	609
DeWalt, Tex.	10	5,954	595
Refugio, Tex.	75	44,371	592
Spindletop, Tex.	28	16,506	590
Pierce Junction, Tex.	16	8,915	558
Total 35 fields	1,518	3,486,620	2,297
Seven eastern states	2,654	38,089	14
All other fields	2,546	533,020	209
Grand total	6,718	4,057,729	604

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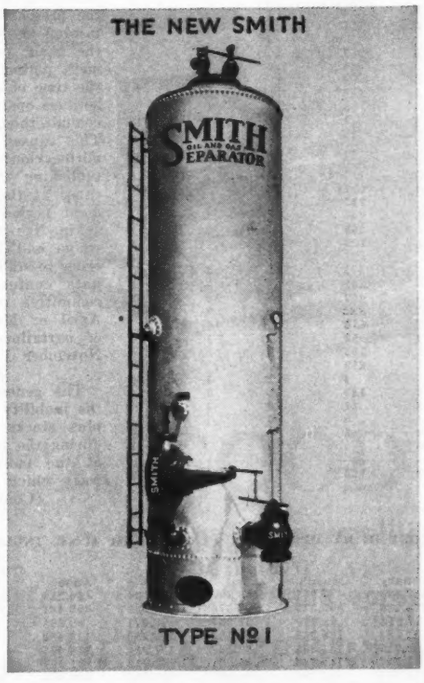

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"If It's Worth Drilling For, It's Worth Saving"

Stabilization Was Feature in Calfiornia

No Important Discoveries Made in First Six Months and Efforts Were Centered in Keeping Down Overproduction

By L. P. Stockman
Staff Correspondent, California Fields

The outstanding development in California during the first half of 1930 from a constructive standpoint was the stabilization of crude oil production resulting from more effective enforcement of curtailment work aided by an abnormal decline at Santa Fe Springs due to partial depletion and exhaustion of the lower zones. California started off the current year with a total daily production of approximately 700,000 bbls., but this was subsequently cut back to 600,000 bbls. by the time June rolled around. It might not be amiss to mention, however, that a substantial part of this 100,000-bbl. reduction in State production can be attributed to a natural decline in production and fewer completions of new wells. This is particularly true of Santa Fe Springs where operators began reducing drilling operations early in the year when it became evident that the period of flush production was rapidly drawing to a close. A substantial decline in the potential daily production of the Maricopa Flats section of the Midway-Sunset Field of Kern County was also a contributing factor toward stabilization of production.

The present statewide curtailment program was initiated in November of last year following a period of several months when state production of crude oil was considerably in excess of 850,000 bbls. per day and large quantities of crude and refined oils were going into storage each month. A substantial reduction was effected within a short time after curtailment work got under way but it was not until June 1, 1930, that California's daily production was brought down to the 600,000-bbl. mark. Due to the failure of some operators to effect curtailment, state production has been consistently in excess of the allowable maximum established by an economic survey, although it has been within striking distance on several occasions. Notwithstanding this condition, however, curtailment work has been signally successful as a conservative estimate places the State's potential production with everything wide open at approximately 900,000 bbls. per day.

Long Fight for Stabilization

The present degree of stabilization effected in crude oil production was not achieved overnight but represents the long efforts of both large and small operators. The primary objective of this curtailment program was to reduce crude oil production to the point where it might be absorbed by refiners at a price commensurate with its intrinsic value in contrast with the ruinous prices prevailing during periods of overproduction. The substantial amount of crude and refined oils accumulated during 1929 made it obligatory for the major companies to prevent any further addition to stocks during 1930 due to economic limitations as this would entail the construction of new storage facilities and in some cases require additional financing in order to cope with the situation. The outlook was not very promising for the accomplishment of this necessity, however, as all indications pointed to a continuance of excess production for more than a year unless the brakes were applied and artificial restriction of production resorted to. This resulted in the promulgation of a curtailment program late in 1929 which had for its objective the equalization of supply and demand as far as possible. A comprehensive preliminary survey showed that the situation on the Pacific Coast might be stabilized if California's production could be brought down to 635,000 bbls. per day but the subsequent economic depression forced the operators general committee to later recommend a further reduction to 596,000 bbls. per day.

Less Oil or Lower Prices

When it became evident late in 1929 that there was no relief in sight from a production standpoint due to concerted attacks on the California gas conservation law which prevented its becoming operative, and the failure of independent producers to pinch back production, the larger companies informed producers that they must either curtail production or face the prospect of lower prices as it would be impossible to continue accumulating crude and refined oils indefinitely. The failure to heed this ultimatum subsequently led to several drastic price cuts and this disciplinary action hastened general approval of the curtailment agreement limiting state production to the current requirements. This cut following the failure of operators to ratify the projected curtailment agreement and reduce production involving the Santa Fe Springs, Long Beach, Seal Beach and Ventura Avenue Fields, was made by the Standard Oil Co., effective October 18, 1929. This drastic cut, which represented a reduction of more than 50 per cent in the posted price of crude oil, was restored on November 8, 1929, when operators in these fields agreed to conform to the general curtailment program.

The curtailment agreement met with considerable more favor following this drastic price cut and as a result of rigid adherence and subsequent effective enforcement the Standard and other large buyers posted a substantial upward revision in crude oil prices on March 11, 1930, covering every productive field in the State. Everything went along satisfactorily following this increase until Santa Fe Springs subsequently got out of line when a large number of producers refused to ratify an extended agreement and proceeded to produce full blast. The failure of the committee to get Santa Fe Springs back in line forced the Standard Oil Co. to initiate coercive measures by again cutting prices, although in this instance the reduction was limited to this particular offending field. This cut made by the Standard under date of May 17, 1930, represented a reduction in crude prices at Santa Fe Springs approximating 40 per cent and bringing 39 gravity oil down from $1.65 per barrel to 95 cents. This reduced price prevailed until June 14, 1930, or exactly four weeks to the day from the time crude oil quotations were reduced, at which time the original schedule was restored.

Difficulties in Handling Situation

Considerable difficulty has been experienced on several occasions during the present curtailment period in maintaining a stabilized position. During the early part of the existing curtailment period it was the custom to limit the time of curtailment to 60 or 90 days because operators were very reluctant to commit themselves for too long a period. This caused the operators general committee considerable inconvenience in establishing the allowable production because at the expiration of each curtailment period the field chairman had to again line up each operator, some of whom had general offices elsewhere. In order to stabilize conditions and to eliminate confusion, the operators general committee ruled at its last meeting in April or May that the present period of curtailment would not expire until November 1, 1930.

A Gasoline War

The general economic depression and the inability of refiners to liquidate surplus stocks of crude and refined oils during the first half of 1930 led to one of the most disastrous gasoline price wars which has ever visited the Pacific

(Continued on Page 140)

CALIFORNIA FIELD OPERATIONS BY DISTRICTS FOR FIRST HALF YEAR 1930

District—	Oil wells completed No.	Oil wells completed Bbls. dy.	Oil wells* Drill.	Oil wells* Prod.	Abandoned Drill.	Abandoned Prod.	New rigs
Kern River	10	2,015	3	902	1	1	12
Mount Poso	20	2,566	4	74	3	...	24
Fruitvale	6	2,095	4	15	5	3	9
Round Mountain	7	1,350	4	17	1	...	15
McKittrick	3	105	1	256	...	...	1
Midway-Sunset	44	29,336	18	1,986	9	40	29
Elk Hills	..	.....	...	230	3	1	1
Lost Hills-Belridge	4	70	3	223	1	...	4
Coalinga	..	.....	2	731	...	3	1
Kettleman Hills	4	8,913	9	5	3	...	4
Buttonwillow Field	..	.....	1	7	...	...	6
Wheeler Ridge	..	.....	...	33	...	...	...
Watsonville	..	.....	...	6	...	3	...
Santa Maria	..	.....	4	189	5	11	2
Summerland	3	225	1	98	1	1	1
Capitan	5	795	2	1	2	...	10
Elwood	13	41,767	7	29	1	1	21
Santa Barbara	..	.....	...	....	5	2	1
Rincon	3	1,085	3	32	3	1	6
Ventura Avenue	23	31,525	27	145	1	1	18
Ventura-Newhall	3	312	20	451	16	...	20
Los Angeles-Salt Lake	..	.....	...	311	...	...	...
Whittier	..	.....	1	165	...	3	...
Fullerton	..	.....	1	369	...	2	...
Coyote	2	1,260	4	198	1	...	6
Santa Fe Springs	129	117,457	57	431	5	26	5
Montebello	..	.....	...	172	1	3	...
Richfield	7	1,305	3	235	2	3	5
Huntington Beach	7	844	3	457	...	10	1
Long Beach	65	37,847	75	882	11	8	85
Torrance	..	.....	...	570	...	14	...
Domingues	..	.....	2	59	...	1	1
Rosecrans	1	1,000	1	102	4	9	4
Inglewood	3	400	1	219	...	...	3
Newport	..	.....	...	4	2	1	1
Seal Beach	2	565	2	138	...	2	1
Potrero	7	4,870	6	11	3	1	14
Lawndale	..	.....	1	8	1	...	...
Playa Del Rey	8	10,243	10	2	1	...	41
Miscellaneous drilling	..	.....	160	....	52	...	79
Total	379	297,950	440	9,763	143	151	431

*Daily average.

CALIFORNIA PRODUCTION OF CRUDE BY DISTRICTS, JANUARY TO JUNE, INCLUSIVE, 1930

Districts—	January	February	March	April	May	June	Total first 6 mos. 1930	Daily	Grand total June 30
Kern River	628,619	547,330	477,253	468,907	466,120	430,316	3,019,045	16,680	280,188,250
Mount Poso	389,638	378,288	307,522	357,376	308,062	396,461	2,137,347	11,808	4,102,382
Fruitvale	97,424	77,814	63,939	58,207	78,671	80,265	456,320	2,521	1,184,251
Round Mountain	87,193	82,583	100,361	118,137	109,965	110,869	609,108	3,365	885,997
McKittrick	147,969	132,315	131,865	126,932	121,928	116,455	777,464	4,295	79,760,199
Midway-Sunset	2,256,593	2,121,947	2,117,942	2,006,331	1,972,929	1,881,409	12,357,151	68,272	681,875,003
Elk Hills	519,720	478,656	547,998	605,800	610,714	580,018	3,342,906	18,469	111,437,388
Lost Hills-Belridge	155,212	143,685	74,834	68,352	69,726	68,211	580,020	3,203	60,879,221
Coalinga	285,941	268,252	285,831	277,991	289,651	281,094	1,688,760	9,330	314,471,548
Kettleman Hills	402,842	368,676	398,684	422,553	459,258	431,692	2,483,705	13,722	4,635,198
Wheeler Ridge	19,116	17,817	19,193	17,980	18,685	17,761	110,552	611	2,252,699
Watsonville	1,938	1,750	1,938	1,875	1,887	1,875	11,263	63	1,273,164
Santa Maria	111,369	95,696	95,832	93,441	106,806	98,875	602,019	3,326	125,698,804
Capitan	.....	3,498	2,298	568	309	736	7,409	41	10,294
Summerland	13,518	9,673	12,568	9,740	10,973	9,333	65,805	364	2,889,844
Elwood	915,293	1,217,368	1,209,024	1,319,017	1,533,125	1,310,706	7,504,533	41,461	17,922,341
Santa Barbara	3,045	106	.....	.....	.....	.....	3,151	17	14,019
Rincon	107,818	87,873	89,796	84,715	94,607	79,791	543,599	3,003	2,824,494
Ventura Avenue	1,605,932	1,540,039	1,375,453	1,358,538	1,503,518	1,448,640	8,832,120	48,796	92,536,043
Ventura-Newhall	159,002	147,582	155,156	149,465	151,916	144,292	907,413	5,013	46,447,077
Los Angeles-Salt Lake	45,656	44,448	47,206	46,291	46,513	46,101	278,214	1,537	62,827,754
Whittier	46,762	40,846	43,701	42,007	44,298	42,869	259,483	1,434	14,337,882
Fullerton (Brea Olinda)	409,485	375,316	419,997	379,617	392,105	366,588	2,343,108	12,945	135,152,624
Coyote	354,833	334,567	336,805	311,074	316,891	309,892	1,963,062	10,846	122,289,780
Santa Fe Springs	5,302,294	5,017,845	4,650,283	3,842,187	3,719,842	3,391,433	25,923,884	143,226	287,487,196
Montebello	266,513	240,894	217,512	219,498	221,003	217,178	1,382,598	7,639	85,185,083
Richfield	437,256	409,067	332,363	298,163	293,164	268,544	2,038,557	11,263	63,021,520
Huntington Beach	1,272,413	1,148,030	902,750	853,728	884,017	854,976	5,915,913	32,685	168,477,679
Long Beach	3,297,792	3,186,755	3,082,062	3,098,489	2,948,667	2,792,064	18,405,829	101,690	401,584,029
Torrance	391,324	345,922	375,645	356,143	352,746	348,200	2,169,980	11,989	66,405,833
Domingues	332,608	309,505	282,908	291,535	324,742	302,550	1,843,848	10,187	43,704,984
Rosecrans	215,220	190,648	211,081	191,865	214,608	207,349	1,230,771	6,800	23,582,348
Inglewood	681,191	613,625	551,495	522,814	532,669	516,372	3,418,166	18,885	71,449,591
Newport	1,240	1,120	1,240	1,200	1,240	1,200	7,240	40	113,335
Seal Beach	930,489	870,902	744,180	704,563	680,204	612,041	4,542,379	25,096	48,409,991
Potrero	33,791	19,915	29,501	40,091	74,715	119,425	307,438	1,699	686,825
Lawndale	22,134	15,807	4,765	12,981	10,735	8,321	74,743	413	482,963
Playa Del Rey	41,060	.....	.....	11,572	77,435	127,893	257,960	1,425	283,031
Total	21,983,242	20,686,660	19,699,979	18,768,743	19,044,444	18,020,795	118,402,863	654,159	3,426,770,933

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State Could Have Broken All Its Records for Production but Output Was Kept Down. Busy in Field Work

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

With a potential production transcending any record of the State in past years, Oklahoma in the first half of its thirty-second year as an oil producer held back its production 8,240,728 bbls. below its record of the first half of 1929, and 11,786,091 bbls. below the record of the first half of 1927. The State produced in the first six months of 1930, 117,779,527 bbls., as against 126,020,255 bbls. in the same period last year and as against 129,565,618 bbls. in the first half of 1927 when the Seminole Field was permitted to produce without restraint.

Oklahoma in the latter part of the first half of this year could have produced 1,200,000 bbls. a day. Through the whole-hearted efforts of producers, with the government of the State of Oklahoma firmly back of them, production never averaged higher than 658,491 bbls. per day for a period of any month and produced as low as 616,626 bbls. as an average for March. It was a triumph of orderly producing, and kept in the ground millions of barrels that can be drawn upon later, and it saved the market from collapse.

The Oklahoma City Pool, which in June was credited with a potential production close to 600,000 bbls. a day, was permitted to produce an average of 98,766 bbls. a day for the six-month period and in no month did it average as high as 125,000 bbls. a day.

The Seminole Field, under curtailment throughout the half year, was permitted to produce 39,877,703 bbls., and of this volume new pools locally known as East Earlsboro, South Earlsboro and East Little River contributed a goodly share. In the first half of 1929 the Seminole Field produced 50,997,320 bbls.

Producers Co-operated

Operators in the Oklahoma City and Greater Seminole areas, together, with operators in new pools that were placed under curtailment orders, were a unit in keeping production down to pipe line demands. Every recommendation of the State Proration Committee, headed by C. C. Herndon, and representing the Mid-Continent Oil and Gas Association, was adopted with no serious objectors. Those who did complain of curtailment and proration in the early part of the year followed the will of the majority, and later joined their fellow producers in assenting to each deeper cut in their potential production.

Initial Production Record Broken

But while production was held back to almost 50 per cent of the State's potential, field operations were vigorously pursued and more wells were drilled than in the first half of last year or the same period in the year before that. The completions in the first half of 1930 numbered 1,898 as against 1,740 in the same period last year, and 1,821 in the first half of 1928. The enormous initial production of 2,470,015 bbls. broke all records in the State. It is true that some of this initial production represented the first day's record of wells that were completed late in December, 1929, but recorded in the January, 1930, completions because of having been shut in until that month, but even excluding these wells the record was hundreds of thousands of barrels higher than any six-month record of its kind in past years.

One Price Cut

At the opening of the year, with so many big wells coming in, Oklahoma threatened to go on a rampage of production. It was stopped by a 25-cent cut in the price of crude by the Carter Oil Co. in mid-January. In the week ending December 28, 1929, production averaged 646,805 bbls. according to current estimate. In the week following, the average had risen to 675,285 bbls. a day and in the week ending January 11, it was estimated that 706,765 bbls. per day was being produced. Then came the cut in price by the Carter followed by the Magnolia Petroleum Co. Other companies held to their price schedules until mid-February when the Prairie Oil & Gas Co. met the cut and other companies followed. Meanwhile production had dropped to 693,430 bbls., then to 654,845 bbls. and 611,555 bbls. as an average in the three weeks that followed the cut in price. The reduction in output was the result of curtailment as the producers feared further slashes in the crude price.

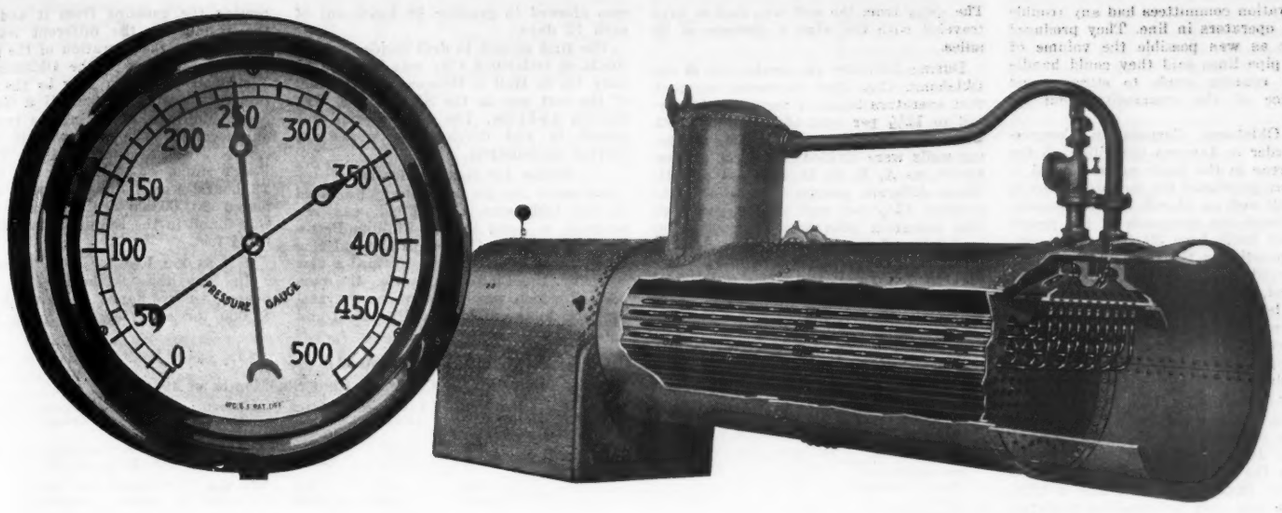
Following the unrestrained burst of speed early in January there never was a time up to the close of the half year that

OKLAHOMA

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
WASHINGTON COUNTY:							
Daily average	4,971	5,158	5,169	5,172	4,987	5,015	
Month	154,101	144,424	160,239	155,160	154,597	150,450	918,971
NOWATA COUNTY:							
Daily average	4,916	5,673	5,429	5,427	5,578	5,591	
Month	152,396	158,844	168,299	162,810	172,918	167,730	982,997
ROGERS COUNTY:							
Daily average	2,188	2,047	2,055	2,060	2,128	2,163	
Month	67,828	57,316	63,705	61,800	65,968	64,890	381,507
OSAGE AND EASTERN KAY COUNTIES:							
Burbank—							
Daily average	16,738	16,781	16,245	16,111	16,256	16,115	
Month	518,878	469,868	503,595	483,330	503,936	483,450	2,963,057
Osage, outside Burbank—							
Daily average	23,109	22,695	22,934	22,711	22,915	22,874	
Month	716,379	635,460	710,954	681,330	710,365	686,220	4,140,708
TULSA AND WAGONER COUNTIES:							
Bird Creek, Owasso, etc.—							
Daily average	3,111	3,230	3,209	3,203	3,194	3,201	
Month	96,441	90,440	99,479	96,090	99,014	96,030	577,494
Red Fork, Sand Springs, Turkey Mountain, Bruner—							
Daily average	1,135	1,202	1,133	1,105	1,116	1,098	
Month	35,185	33,656	35,123	33,150	34,596	32,940	204,650
Bixby, Leonard—							
Daily average	867	1,453	866	832	826	819	
Month	26,877	40,684	26,846	24,960	25,606	24,570	169,543
Broken Arrow, Coweta—							
Daily average	919	914	933	944	926	931	
Month	28,489	25,592	28,923	28,320	28,706	27,930	167,960
TULSA, OKMULGEE AND MUSKOGEE COUNTIES:							
Okmulgee and Beggs—							
Daily average	2,474	2,411	2,423	2,386	2,134	2,092	
Month	76,694	67,508	75,113	71,580	66,154	62,760	419,809
Mounds—							
Daily average	1,659	1,628	1,533	1,489	1,442	1,444	
Month	51,429	45,584	47,523	44,670	44,702	43,320	277,228
Bald Hill and Haskell—							
Daily average	2,283	2,290	2,317	2,376	2,151	2,133	
Month	70,773	64,120	71,827	71,280	66,681	63,990	408,671
Morris, Boynton and Cole—							
Daily average	1,991	1,724	1,914	1,810	1,751	1,710	
Month	61,731	48,272	59,334	54,300	54,281	51,300	329,288
OKMULGEE, OKFUSKEE, SEMINOLE AND POTTAWATOMIE COUNTIES:							
Seminole City—							
Daily average	23,280	22,018	18,983	20,401	18,804	21,956	
Month	721,680	616,504	619,473	612,030	582,924	658,680	3,811,291
East Seminole—							
Daily average	4,748	3,819	3,462	3,525	3,503	3,056	
Month	147,188	106,932	107,322	105,750	108,593	91,680	667,465
Bowlegs—							
Daily average	23,666	21,512	20,149	20,157	18,140	21,422	
Month	733,646	602,336	624,619	604,710	562,340	642,660	3,770,311
Little River—							
Daily average	64,759	64,790	56,804	58,362	52,103	51,763	
Month	2,007,529	1,814,120	1,760,924	1,750,860	1,615,193	1,552,890	10,501,516
Earlsboro—							
Daily average	97,133	74,370	75,812	75,075	76,084	78,935	
Month	3,011,123	2,082,360	2,350,172	2,252,250	2,358,604	2,368,050	14,422,559
Searight—							
Daily average	7,986	8,263	9,634	10,575	11,504	10,961	
Month	247,566	231,364	298,654	317,250	356,624	328,830	1,780,288
Mission—							
Daily average	14,833	13,604	12,381	12,033	11,910	11,533	
Month	459,823	380,912	383,811	360,990	369,210	345,990	2,300,736
Carr City—							
Daily average	8,492	9,253	9,785	8,319	9,574	7,773	
Month	263,252	259,084	303,335	249,570	296,794	233,190	1,605,225
Maud—							
Daily average	7,163	5,864	5,893	5,286	5,054	4,471	
Month	222,053	164,192	182,683	158,580	156,674	134,130	1,018,313
Total Seminole Field—							
Daily average	252,060	223,493	213,903	213,733	206,676	211,830	
Month	7,813,860	6,257,804	6,630,993	6,411,990	6,406,956	6,356,100	39,877,703
Allen—							
Daily average	24,207	21,816	19,092	20,035	21,343	20,378	
Month	750,417	610,848	591,852	601,050	661,633	611,340	3,827,140
Konawa—							
Daily average	3,019	3,375	8,395	8,445	15,973	22,266	
Month	93,589	94,500	260,245	253,350	495,163	667,980	1,864,827
Asher—							
Daily average	2,580	2,283	2,301	2,093	1,811	1,669	
Month	79,980	63,924	71,331	62,790	56,141	50,070	384,236
Wanette—							
Daily average	.....	.....	.....	.....	1,440	3,594	
Month	.....	.....	.....	.....	44,640	107,820	152,460
Pearson-St. Louis—							
Daily average	47,234	43,960	41,084	37,103	34,180	28,989	
Month	1,464,254	1,230,880	1,273,604	1,113,090	1,059,580	869,670	7,011,078
Sasakwa—							
Daily average	12,709	9,551	11,058	11,558	8,969	8,277	
Month	393,979	267,428	342,798	346,740	278,039	248,310	1,877,294
Beebe—							
Daily average	2,563	2,759	2,625	2,635	3,308	3,589	
Month	79,453	77,252	81,375	79,050	102,548	107,670	527,348
Henryetta, Deaner-Lyons, etc.—							
Daily average	6,257	6,081	6,903	7,067	6,871	6,803	
Month	193,967	170,268	213,993	212,010	213,001	204,090	1,207,329
Wewoka—							
Daily average	4,183	4,058	3,760	3,699	3,692	3,711	
Month	129,673	113,624	116,560	110,970	114,452	111,330	696,609
Cromwell—							
Daily average	7,277	7,425	7,866	7,624	7,512	7,514	
Month	225,587	207,900	243,846	228,720	232,872	225,420	1,364,345

(Table Continued on Next Page)



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the proration committees had any trouble keeping operators in line. They produced as near as was possible the volume of oil the pipe lines said they could handle without running crude to storage, and the price of the commodity went no lower.

The Oklahoma Corporation Commission's order in January curtailing all the flush areas in the State expired April 1. Operators petitioned the commission again in March and on March 28 the commission ordered the extension of the proration plan until June 30. The order contained practically the same provisions as that issued in January. The Oklahoma City Pool, was ordered to curtail its output at least 75 per cent. The order allowed operators to produce a maximum of 25 per cent of the potential. The pipe line companies ran only 16⅔ per cent of the production.

Oklahoma City Big Feature

The Oklahoma City Field was the outstanding oil region in the first half of the year. It is credited with 263 completions in the half year but about 50 of these were in fact completed late in 1929 but were held over and credited to January because not until then could their initial production be recorded with any accuracy. Of the 263 completions, 245 were oil wells with an initial production of 1,988,555 bbls., an average of more than 8,100 bbls. per well. Sensational events occurred in the field in the course of the half year with wells running wild, gas wells afire and big wells following one another in all parts of the field, which spread out in all directions until the southern end overlapped into Cleveland County and the west side of it extended into the capital city itself threatening a townlot drilling campaign on small acreage.

A serious fire occurred in March at the Sinclair Oil & Gas Co. and Amerada Petroleum Corp.'s No. 5 Kinter, SE cor. NE SE, Section 30-11-2w. The well extended production a half mile east in the south end of the pool. It was estimated to be making 125,000,000 feet of gas and spraying considerable oil from a total depth of 6,283 feet, in the Detrital sand. The well caught fire while being shut in. The crew had partially succeeded in shutting in the large flow of gas, when it was ignited with a blast that shook the other buildings and rigs on the lease, and leaped 100 feet in the air over the top of the derrick. After burning two days it was blown out with a charge of high explosive. Two shots were necessary to snuff out the blaze. It caused considerable damage, the rotary rig, complete rotary equipment, three boilers and the boiler house being ruined. In March each new well completed in the Oklahoma City Field was bringing the development nearer the city limits.

"Wild Mary's" Performance

In the south end of the field one of the most spectacular wells in the Oklahoma City Pool, ran wild for 11 days. Starting March 19, the Indian Territory Illuminating Oil Co.'s No. 1 Mary Sudik, NE cor. SW, Section 31-11-2w, got out of control and presented one of the most difficult problems that operators have ever had. The well was producing from the Wilcox sand at a total depth of 6,470 feet. When it blew in it produced dry gas, but it soon drilled itself deeper and began spraying oil, some of which was carried by the wind for several miles. It was later estimated to be making between 2,000 and 2,500 bbls. of oil an hour and an estimated 200,000,000 feet of gas. Some of the oil was recovered by the hasty building of earthen reservoirs and ponds, and also by damming the creek into which much of the oil had found its way. Dwelling houses and field offices in the vicinity were abandoned and all near-by drilling operations were shut down. The well blew in while the crew was pulling the tools from the hole. The sand thrown up by the tremendous volume of gas cut the connections and made it impossible to shut the well in. Engineers and field men of the Indian Territory Illuminating Oil Co. after a desperate day and night battle covering several days succeeded in placing the well under control. While it was flowing wild all near-by operations were shut down. The spray from the well was said to have traveled with the wind a distance of 30 miles.

During February the production in the Oklahoma City Pool increased so much that operators found it necessary to curtail to 12½ per cent of potential which was effective February 25. The producing wells were divided into eight classes, known as A, B, C, D, E, F, G and H. These different groups were allowed to produce 12½ per cent of the potential. The proration plan was changed again in April and the operators were allowed to increase the production from 12½ per cent to 16⅔ per cent. The method of producing the wells was unchanged. There were eight classes of wells and each class was allowed to produce 48 hours out of each 12 days.

The first permit to drill inside the city limits of Oklahoma City was issued January 15, to Hall & Briscoe. The location of the test was in the SE cor. NE NE, Section 15-11-3w. The rig material was moved in and development work was started immediately.

Outlet for Gas Production

An outlet for the natural gas produced in the Oklahoma City Field was announced in April by the Phillips Petroleum Co. and the Oklahoma Natural Gas Corp. These two companies formed a new company, the Philokla Gas Co., the purpose of which was to compress the natural gas in the Oklahoma City Pool and remove the gasoline from it and return the residue to the different leases for fuel and for the operation of the gas lift.

The west edge of the Oklahoma City Field was proved in May by the completion of the Mid-Kansas Oil & Gas Co.'s No. 3 Mollman, extending the production one location. The well was in the SE cor. NW SE, Section 23-11-3w. The first hour's gauge was 204 bbls. and the first 12 hours' was 1,726 bbls. with an estimated 15,000,000 feet of gas. The oil was found in the Simpson sand at 6,353-6,431 feet.

$1,000 Fee for City Tests

In May the Oklahoma City Council passed an ordinance charging a fee of $1,000 for each location for a test in-

OKLAHOMA (Continued)

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
Papoose-Gilcrease—							
Daily average	2,894	2,836	2,943	2,795	2,798	2,802	
Month	89,714	79,408	91,233	83,850	86,738	84,060	515,003
Jarvis-Holm—							
Daily average	321	327	315	306	310	313	
Month	9,951	8,988	9,765	9,180	9,610	9,390	56,884
Weleetka—							
Daily average	977	976	913	1,049	963	949	
Month	30,287	27,328	28,303	31,470	29,853	28,470	175,711
Wetumka—							
Daily average	39	39	39	39	38	38	
Month	1,209	1,092	1,209	1,170	1,178	1,140	6,998
Yeager—							
Daily average	451	446	401	655	679	656	
Month	13,981	12,488	12,431	19,650	21,049	19,680	99,279
Miscellaneous—							
Daily average	811	846	725	1,169	572	698	
Month	25,141	23,688	22,475	35,070	17,732	20,940	145,046
CREEK AND TULSA COUNTIES:							
Glen Pool, Jenks, Kiefer—							
Daily average	6,446	6,648	6,609	6,596	6,605	6,611	
Month	199,826	186,144	204,879	197,880	204,755	198,330	1,191,814
Sapulpa and Fisher—							
Daily average	612	562	562	567	568	563	
Month	18,972	15,736	17,422	17,010	17,608	16,890	103,638
Cushing-Shamrock—							
Daily average	14,533	13,885	14,045	13,956	13,755	13,832	
Month	450,523	388,780	435,395	418,680	426,405	414,960	2,534,743
Bristow, Kellyville and Depew—							
Daily average	13,282	13,440	13,633	13,512	13,512	12,490	
Month	411,742	376,320	422,623	405,360	418,872	374,700	2,409,617
Pickett Prairie and North Bristow—							
Daily average	1,807	1,792	1,665	1,716	1,603	1,586	
Month	56,017	50,176	51,615	51,480	49,693	47,580	306,561
Eastern Bristow or Slick—							
Daily average	5,343	5,439	4,950	5,126	4,880	4,871	
Month	165,633	152,292	153,450	153,780	151,280	146,130	922,565
PAWNEE COUNTY:							
Cleveland—							
Daily average	2,703	2,721	2,824	3,210	2,971	3,008	
Month	83,793	76,188	87,544	96,300	92,101	90,240	526,166
Keystone—							
Daily average	1,583	1,543	1,585	1,519	1,902	1,614	
Month	49,073	43,204	49,135	45,570	58,962	48,420	294,364
Jennings—							
Daily average	3,177	3,021	2,124	2,117	2,136	2,152	
Month	98,487	84,588	65,844	63,510	66,216	64,560	443,205
Otoe—							
Daily average	510	524	518	562	562	558	
Month	15,810	14,672	16,058	16,860	17,422	16,740	97,562
Ralston-Masham—							
Daily average	182	227	219	219	239	226	
Month	5,642	6,356	6,789	6,570	7,409	6,780	39,546
PAYNE COUNTY:							
Yale, Quay, Ingalls—							
Daily average	3,825	3,836	3,907	3,874	3,930	3,862	
Month	118,575	107,408	121,117	116,220	121,830	115,860	701,010
North Cushing—							
Daily average	2,513	3,831	3,357	2,600	3,766	3,392	
Month	77,903	107,268	104,067	78,000	116,746	101,760	585,744
South Cushing—							
Daily average	252	282	245	210	1,215	810	
Month	7,812	7,896	7,595	6,300	37,665	24,300	91,568
Mehan-Ripley—							
Daily average	1,197	2,116	2,796	2,677	2,167	2,212	
Month	37,107	59,248	86,676	80,310	67,177	66,360	396,878
OKLAHOMA COUNTY:							
Oklahoma City—							
Daily average	82,301	89,313	74,344	108,167	124,951	113,475	
Month	2,551,331	2,497,964	2,304,664	3,245,010	3,873,481	3,404,250	17,876,700
LINCOLN COUNTY:							
Stroud—							
Daily average	907	922	909	933	943	919	
Month	28,117	25,816	28,179	27,990	29,233	27,570	166,905
Davenport—							
Daily average	1,793	1,762	1,169	1,216	1,208	1,202	
Month	55,583	49,336	36,239	36,480	37,448	36,060	251,146
Kendrick—							
Daily average	192	197	190	202	207	209	
Month	5,952	5,516	5,890	6,060	6,417	6,270	36,105
Chandler—							
Daily average	.....	.....	.....	5,723	4,798	4,870	
Month	.....	.....	.....	171,690	148,738	146,280	466,708
KAY, GRANT AND NOBLE COUNTIES:							
Blackwell—							
Daily average	938	997	958	1,068	1,201	1,077	
Month	29,078	27,916	29,698	32,040	37,231	32,310	188,273
Vernon—							
Daily average	835	784	719	759	745	717	
Month	25,885	21,952	22,289	22,770	23,095	21,510	137,501
Otstot—							
Daily average	666	863	887	908	861	789	
Month	20,646	24,164	27,497	27,240	26,691	23,670	149,908
Deer Creek—							
Daily average	649	679	697	731	710	694	
Month	20,119	19,012	21,607	21,930	22,010	20,820	125,498
Ponca City—							
Daily average	593	586	660	568	561	563	
Month	18,352	16,408	20,460	17,040	17,391	16,890	106,541
Mervine—							
Daily average	212	282	259	252	264	259	
Month	6,572	7,896	8,029	7,560	8,184	7,770	46,011
Braman—							
Daily average	3,665	3,507	3,471	3,496	3,369	3,291	
Month	113,615	98,196	107,601	104,880	104,439	98,730	627,461

(Table Continued on Next Page)

side the city limits. The fund was to be used to pay inspectors to keep a check on the drilling operations and to enforce the rules and regulations.

The opinion of many usually reliable observers is the Oklahoma City Pool reached its peak in potential production in May, 1930. The potential production was then estimated to be 1,250,000 bbls. a day. At that time 250 wells had been completed, perhaps one-third of the total wells that will be found productive in the area. In the majority of other pools the peak was usually reached when one-third of the wells had been completed. The drilling and the development of town-lots may upset the estimates. The initial production of the wells being completed in May was smaller than of those completed six months before. The gas pressure was declining, in the south end of the field. It was estimated to be off at least one-half, and the oil production from the Silicious lime was showing a large decline and the water encroachment was increasing.

Total Recovery on June 30

The total recovery of oil from the Oklahoma City Pool to June 30 was 26,726,000 bbls. from a total of 348 completed wells. The largest recovery from any one well completed in the Oklahoma City Pool was from the Indian Territory Illuminating Oil Co.'s No. 1 Mable Fuzzell, SW cor. NW, Section 19-11-2w. It made a total of 1,207,550 bbls. of oil from October, 1929, to May 30, 1930. The initial production of the well was 14,085 bbls. from the Silicious lime at a total depth of 6,521 feet.

Production was extended a mile west the last part of May by Hall & Briscoe's No. 1 Holmes, NE cor. SW SE, Section 10-11-3w, near the south edge of the city limits. The well made 9,743 bbls. the first 12 hours and caused considerable activity in town lots.

Prorated Important Fields

The ever-increasing flood in the State made proration necessary in new and semiflush pools in each of the first six months. Producers co-operated in the curtailment plans and made important concessions in all of the flush areas.

The proration plans outside Oklahoma City were as follows: New areas opened up and producing were ordered curtailed 75 per cent of potential; a 66⅔ per cent curtailment was ordered in the East Earlsboro Pool, and a 30 per cent curtailment of production in the balance of the Greater Seminole area and the same in the other flush areas in the State including Logan County, Allen, Sasakwa, St. Louis, Asher and Konawa Pools.

In the week ending May 9, proration was made effective in several additional flush areas. A new pool was opened in the area west of Chandler in Lincoln County. The discovery well was permitted to flow wide open until the second well was completed and then the flow of all the wells in the area was limited to 25 per cent of the potential. A wildcat well was completed by Reiter-Foster Oil Corp. and others in western Payne County, and the new producer of the Continental Oil Co. and Barnsdall Oil Co. in Garfield County were both curtailed May 1 25 per cent of the potential. Payne Drilling Co. and Bullock's new well in southern Pottawatomie County, in Section 22-6-3, was to be curtailed 25 per cent of the potential, effective when the second well was completed. During the month of May the steadily growing potential production in the State was not permitted to influence the actual output. The curtailment agreements were holding the actual production to refinery requirements.

The continued mounting potential production of the State was due to the discovery of new pools and to the development of pools found the previous year. The upward trend in production started in January when the South Earlsboro Pool was found. It was located only a short distance south of the main Earlsboro Pool, which has been a consistent producer for several years. This pool, although believed small in area, has yielded large wells.

Highest Gravity Pool

A new producing area was found in southern Pottawatomie County, west of the Asher Pool, which proved a disappointment to operators. It is now known as the Wanette Pool. It produces crude oil of 45 gravity, believed to be the highest gravity oil yet found in the Greater Seminole area. The potential production of the pool was estimated at 15,000 bbls. by the end of June.

Konawa Pool in Seminole County, opened last year, was developed in the first six months and by the end of June the potential production was estimated at 92,000 bbls. a day. Oil in this area was found in shallower pay sands than in the other producing areas in the Greater Seminole district. The average depth of the wells in the Konawa Pool is 2,950 feet. Development work is expected to continue at the average rate for the rest of the year.

The West Chandler area in Lincoln County gives indications of developing into an important oil-producing district. A well of the Magnolia Petroleum Co. in Section 7-14-3 producing from the 3,200-foot horizon was drilled deeper in May and found production in the Wilcox sand at 5,072-77 feet. Its initial production was 5,000 bbls. a day. The area has been producing oil for several years from the shallow horizons. This was followed by other tests and by the end of June the area had several large producing wells.

Southern Garfield County attracted attention by the completion of a productive wildcat test. The well was Barnsdall Oil Co. and others' No. 1 Brown, CNL SW, Section 10-20-4w. It gauged 720 bbls. the first 24 hours. It was located about 5 miles north of the present production in the Marshall Pool in Logan County. Western Payne County had a community test in Reiter-Foster's No. 1 Fennell, C NW NE, Section 5-19-1w, which was completed for 1,825 bbls. the first 24 hours. It was believed to be the opening of another producing area.

Southern Oklahoma was being explored and old producing wells were drilled deeper in the Cement Pool in Caddo County, which resulted in new producing horizons for that part of the State. Some expressed the opinion the operators might find production in deeper formations than have been explored to date.

The Oklahoma Panhandle, dormant for years, was again active from a leasing standpoint. Approximately 250,000 acres of leases were put on record at the county seats of the three counties during the first half of the year. The activity in the area was due to the announcement of new gas pipe lines from the Texas Panhandle and from southwestern Kansas to points in the North.

Opening of Wanette Pool

The West Asher or Wanette Pool in Pottawatomie County was opened in February by the Payne Drilling Co. and Bullock in their No. 1 Bullock, SE cor. NE Section 22-6-3. The operators got water in the Simpson sand at 4,095-4,141 feet

(Continued on Page 185)

OKLAHOMA (Continued)

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
Hubbard—							
Daily average	1,605	1,583	1,619	1,598	1,548	1,493	
Month	49,755	44,324	50,189	47,940	47,988	44,790	284,986
Thomas—							
Daily average	430	646	687	727	676	671	
Month	13,330	18,088	21,297	21,810	20,956	20,130	115,611
Garrett—							
Daily average	55	11	23	23	12	14	
Month	1,705	308	713	690	372	420	4,208
Tonkawa—							
Daily average	8,334	7,526	7,652	7,623	7,351	7,310	
Month	258,354	210,728	237,212	228,690	227,881	219,300	1,382,165
Billings—							
Daily average	130	130	129	126	117	116	
Month	4,030	3,640	3,999	3,780	3,627	3,480	22,556
Miscellaneous—							
Daily average	1,513	1,641	1,585	2,431	1,502	1,810	
Month	46,903	45,948	49,135	72,930	46,562	54,300	315,778
GARFIELD COUNTY:							
Garber—							
Daily average	4,351	4,622	4,762	4,593	4,349	4,304	
Month	134,881	129,416	147,622	137,790	134,819	129,120	813,648
LOGAN COUNTY:							
Lovell—							
Daily average	638	679	615	624	320	311	
Month	19,778	19,012	19,065	18,720	9,920	9,330	95,825
Marshall—							
Daily average	10,304	9,140	7,621	6,496	5,306	5,460	
Month	319,424	255,920	236,251	194,880	164,486	163,800	1,334,761
CARTER COUNTY:							
Healdton—							
Daily average	11,937	12,077	11,973	11,926	12,183	11,910	
Month	370,047	338,156	371,163	357,780	377,673	357,300	2,172,119
Hewitt—							
Daily average	7,430	7,269	7,199	7,126	7,356	7,316	
Month	230,330	203,532	223,169	213,780	228,036	219,480	1,318,327
Graham—							
Daily average	2,760	2,712	2,580	2,712	2,601	2,560	
Month	85,560	75,936	79,980	81,360	80,631	76,800	480,267
Brock—							
Daily average	589	567	561	555	542	539	
Month	18,259	15,876	17,391	16,650	16,802	16,170	101,148
Fox—							
Daily average	2,224	2,214	2,226	2,133	2,115	2,088	
Month	68,944	61,992	69,006	64,140	65,565	62,640	392,287
Sholom Alechem—							
Daily average	13,783	13,603	13,902	13,446	13,126	13,247	
Month	427,273	380,884	430,962	403,380	406,906	397,410	2,446,815
STEPHENS AND COTTON COUNTIES:							
Loco-Milroy—							
Daily average	1,356	1,607	1,599	1,518	1,531	1,502	
Month	42,036	44,996	49,569	45,540	47,461	45,060	274,662
Comanche—							
Daily average	1,118	1,176	1,512	1,153	1,237	1,242	
Month	34,658	32,928	46,872	34,590	38,347	37,260	224,655
Duncan—							
Daily average	4,680	4,411	4,285	4,351	4,413	4,390	
Month	145,080	123,508	132,835	130,530	136,803	131,700	800,456
Walters—							
Daily average	2,726	2,536	2,186	2,306	3,088	2,988	
Month	84,506	71,008	67,766	69,180	95,728	89,640	477,828
Kilgore—							
Daily average	375	354	343	339	324	318	
Month	11,625	9,912	10,633	10,170	10,044	9,540	61,924
JEFFERSON COUNTY:							
Hambro, etc.—							
Daily average	2,028	2,218	2,417	2,581	2,969	2,806	
Month	62,868	62,604	74,927	77,430	92,039	84,180	453,548
6s-6w—							
Daily average	183	183	173	158	158	161	
Month	5,673	5,124	5,363	4,740	4,898	4,830	30,628
CADDO COUNTY:							
Cement—							
Daily average	2,113	2,102	3,008	2,734	3,130	4,785	
Month	65,503	58,856	93,248	82,020	97,030	143,550	540,207
GARVIN COUNTY:							
Robberson—							
Daily average	1,910	2,063	2,349	1,853	1,863	1,849	
Month	59,210	57,764	72,819	55,590	57,753	55,470	358,606
GRADY COUNTY:							
Knox—							
Daily average	3,268	3,175	2,991	2,993	2,956	2,942	
Month	101,308	88,900	92,721	89,790	91,636	88,260	552,615
BECKHAM COUNTY:							
Sayre—							
Daily average	35	31	24	103	89	91	
Month	1,085	868	744	3,090	2,759	2,730	11,276
MARSHALL COUNTY:							
Madill—							
Daily average	531	652	820	1,029	1,083	1,107	
Month	16,461	18,256	25,420	30 870	33,573	33,210	157,790
Daily average	671,064	642,058	616,626	651,377	664,113	658,490	650,715
Total first six months 1930	30,802,984	17,977,624	19,115,406	19,541,810	20,587,503	19,754,700	117,779,527
Total first six months 1929	22,575,874	20,464,164	20,838,262	20,235,390	21,345,453	20,561,112	126,020,255
Total first six months 1928	20,978,320	19,294,426	20,162,524	19,096,920	19,443,355	18,482,981	117,458,526
Total first six months 1927	19,035,426	19,752,348	22,480,921	22,208,130	23,258,463	22,830,330	129,565,619
Total first six months 1926	13,874,813	12,392,016	14,312,856	14,468,190	14,507,008	14,073,510	83,428,433
Total first six months 1925	15,462,800	13,905,780	14,463,716	14,055,450	14,443,675	13,832,970	86,164,391
Total first six months 1924	12,292,833	12,236,437	13,038,851	13,452,240	14,347,697	14,447,290	80,013,448
Total first six months 1923	13,328,574	12,045,030	13,958,328	14,399,610	15,658,782	15,572,730	84,963,544

People gathered round and talked excitedly of burning air when a public display of gas lighting in London celebrated the peace of Amiens.

Again in 1930 . . . people talk excitedly of "burning air"

When a public display of gas lighting was given in London in 1802 to celebrate the Peace of Amiens, people talked excitedly of burning air. Napoleon called it a grand folly, and Sir Walter Scott wrote that the world was going mad.

Thus was ushered in the era of gas illumination. It lasted for 75 years. Then electricity stole the field and the gas giant dozed through a quarter century, used chiefly for kitchen cookery.

Now it reawakens in a changed world, to new possibilities, greater opportunities. Eighty thousand miles of pipe lines already laid, largely equipped with Crane valves and fittings, prove that the old problem of transportation is solved. Pipe lines crisscrossing the country as numerously as electric power ones are freely predicted.

What has brought this second greater gas era? The answer is: *piping materials*. Thanks to these, gas men can say for the first time that they are able to pipe gas in enormous quantities from Amarillo gas fields to Chicago, from isolated natural gas fields to users everywhere.

Development of new and better valves and fittings, exactly worked out to help the natural gas industry solve its knottiest problems, are the chief but not the only Crane service to this young giant among modern enterprises. Crane branches and warehouses, located in close proximity to gas fields, make delivery of valves and fittings quick and easy. Order from them. Crane specialists in piping, located at strategic points throughout the country, are ready to help gas and oil men select exactly the right materials for each purpose. Consult them.

1855
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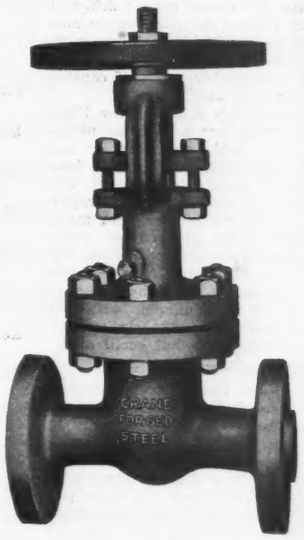
ANNIVERSARY
1930



Now, people are again talking excitedly of the amazing possibilities from the burning of gas, because such Crane valves as this have made possible the economical dependable pumping of natural gas from wells to cities across the continent.

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Overproduction Dulls West Texas

No New Pools of Importance in First Half of Year and Curtailment Kept Down Production of Big Fields

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

The Permian Basin was exceedingly quiet in the first half of 1930 with no pools of major importance discovered and wildcatting going on at a rather slow rate. At the present time there is no wildcat or semiwildcat test which looks especially promising to the industry, although some of them might be especially interesting from a geological standpoint.

Two of the major fields of the basin were closely prorated during the past six months, while a third, the Hendricks Field in Winkler County, although producing under proration, has been steadily declining, practically doing its own prorating. The Yates Field, Pecos County, was curtailed twice during the six months' period, the last cut placing the daily allowance figures at 100,000 bbls. and the west side pools of the Howard-Glasscock County area have been cut at different times, their present daily allowance now running about 17,000 bbls., the wells on the east side being allowed to produce up to 125 bbls. per day each, if capable of producing that amount.

The Church-Fields and McElroy Pools in Crane County are not under proration for those fields are more or less settled in production, which is not burdensome to the basin's daily output. The McCamey Pool in Upton County is rapidly fading out of the picture with many of the wells being plugged as water entirely displaces the oil production. The World Pool in Crockett County is also not under proration, for production of this pool is at a minimum, with but few completions during the six months' period, and those wells but small ones.

Big Lake Very Promising

The Big Lake Pool, Reagan County, is recommended for proration due to the fact that considerable deep drilling, to the 8,200-foot pay is going forward with seven producers in this pay already on production, and the pool producing around 17,000 bbls. per day from the upper pay around 3,000 feet and the deep pay. Some of the wells in the deep pay are peculiar in the fact that they increase in production from day to day, with a like increase in gas volume, and as there is already an overproduction of oil it is felt by many that deeper drilling should be discouraged at this time, and that the Big Lake Pool should be prorated under the general proration plan for the State of Texas. There are two gasoline plants in this pool and two more in process of construction to handle residue gas from the wells.

Yates Field Not Active

Little drilling has taken place in the Yates Field, Pecos County, in the past six months, and the pipe line companies serving the pool have elected to take less oil from it from time to time, until this pool, the most ideally prorated field in the country, is now cut to 100,000 bbls. per day, whereas the daily potential is rated for proration purposes around 5,000,000 bbls.

The Taylor-Link Pool, 18 miles west of the Yates Field, in Pecos County, which was discovered in June, 1929, is producing only about 3,700 bbls. per day, the field having lost the great interest which was displayed in it for at least six months after the discovery, when drilling advanced at a feverish pace. Few completions are recorded in the pool from time to time, and drilling is almost at a standstill.

The Cranfill-Reynolds or Masterson Pool which was opened by the discovery in Section 104, Block 10, H.&G.N. Survey, 4 miles south of Buena Vista in Pecos County, November, 1929, has only two small producing wells in it to date, the pool proving but a small, shallow one, with not much of a future. It has a 2-inch connecting line to the Pecos Valley line which runs from the Pecos Pool to the Santa Fe Railroad.

Pecos Valley Pool

The Pecos Valley Pool has been assuming larger proportions during the past few months, for several producers have been drilled, extending the field for short distances, and enlarging daily production by their small outputs, but this shallow sand pool, discovered in November, 1928, does not seem to have much to offer in the way of large production. A combination 2-inch and 4-inch line serves the field. This line runs to a point on the Santa Fe about 11 miles east of Fort Stockton, where a loading rack is located at Grant siding. Oil from the Masterson Pool is transported through a short 2-inch line to the aforementioned line, and in turn loaded on tank cars from this same loading rack.

The Bennett Field, which was opened in 1927, but which has been lying practically dormant for three years, was somewhat revived this year when several tests were drilled in and around it, resulting in the completion of a few more small producers of not much consequence. This pool was formerly discovered by the Quinby Oil Co. on the Bennett ranch, Section 592, Block 105, G.C.&S.F. Survey, Pecos County. J. D. O'Mara brought in a 40-bbl. producer in Section 54, Block 10, H.&G.N. Survey, to the northeast of Section 592, and two or three other small wells have been completed within this area in the last three months.

The Pryor or Courtney Pool, opened by the Phillips Petroleum Co. in Section 78, Block OW, T.&M.R.R. Survey, 9 miles northwest of Fort Stockton, has failed to materialize into a pool large enough to consider running a small pipe line for an outlet to the railroad and a loading rack, and the small amount of production from two wells has been running to storage, the wells not producing steadily. Oil sand in these tests was found around 1,350 feet. The first test was drilled to a total depth of 4,376 feet in an effort to pick up a deeper pay, but failed in its quest. Oil from this sand tests 22 degrees.

Toborg a Good Find

The Toborg Pool, just northwest of the Yates Field, is one of the best paying fields in West Texas, due to the fact that the wells are only from 350 to 400

(Continued on Page 182)

WEST TEXAS

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

Field and county—	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Ttl. 6 mnts. (bbls.)
BENNETT, WARD:							
Daily average	.....	151	149	161	167	164	
Month	.....	4,249	4,608	4,827	5,166	4,917	23,767
BIG LAKE, REAGAN:							
Daily average	15,170	16,436	16,300	16,320	16,096	17,615	
Month	470,260	460,199	505,309	489,614	498,998	528,449	2,952,829
CHALK-SETTLES, GLASSCOCK AND HOWARD:							
Daily average	38,750	38,309	38,651	39,019	35,637	30,350	
Month	1,201,247	1,072,654	1,198,195	1,170,577	1,104,756	910,500	6,657,929
CHURCH, FIELDS, CRANE:							
Daily average	20,250	21,608	22,130	21,063	21,771	19,300	
Month	627,764	605,033	686,027	631,879	674,886	579,009	3,804,598
HENDRICKS, WINKLER:							
Daily average	88,130	90,993	87,194	80,480	72,542	69,306	
Month	2,732,030	2,547,797	2,703,013	2,414,414	2,248,817	2,079,180	14,725,251
McCAMEY-TAYLOR, UPTON-CRANE:							
Daily average	7,681	9,563	10,485	8,687	8,173	6,237	
Month	238,114	267,773	325,044	260,602	278,123	187,100	1,556,756
McELROY, CRANE:							
Daily average	14,298	13,850	14,122	13,893	13,936	14,066	
Month	443,233	387,790	437,781	416,781	432,011	421,993	2,539,589
SKELLY, REAGAN:							
Daily average	192	173	155	161	193	181	
Month	5,961	4,847	4,797	4,815	5,970	5,428	31,818
IRA, SCURRY:							
Daily average	24	22	20	24	24	25	
Month	750	624	624	722	756	759	4,235
POWELL, CROCKETT:							
Daily average	1,569	1,851	1,627	1,618	1,730	1,807	
Month	48,645	51,817	50,449	48,547	53,621	54,203	307,282
YATES, CROCKETT:							
Daily average	116	454	372	457	379	380	
Month	3,600	12,684	11,517	13,716	11,754	11,408	64,679
STEPHENS, FISHER:							
Daily average	1,197	1,302	1,031	970	1,566	1,930	
Month	37,096	36,462	31,956	29,091	48,536	57,907	241,049
WESTBROOK-IATAN, MITCHELL:							
Daily average	2,085	2,134	2,078	2,042	2,160	2,159	
Month	64,633	59,710	64,405	61,257	66,950	64,777	381,732
WHEAT, LOVING:							
Daily average	1,052	1,312	1,263	1,247	1,394	1,850	
Month	32,610	36,735	39,141	37,406	43,225	55,505	244,622
YATES, PECOS:							
Daily average	142,080	133,357	128,390	112,335	112,421	112,850	
Month	4,404,486	3,734,004	3,980,076	3,370,053	3,485,039	3,385,510	22,359,168
HAYZLETT, WARD:							
Daily average	469	491	434	443	328	383	
Month	14,545	13,735	13,457	13,280	10,161	11,487	76,665
O'BRIEN-HUTCHINGS, WARD:							
Daily average	1,053	941	940	899	1,337	1,510	
Month	32,630	26,345	29,130	26,969	41,440	45,298	201,813
GRAND FALLS, WARD:							
Daily average	22	80	70	65	63	87	
Month	774	2,228	2,181	1,961	1,938	2,518	11,600
MERTSON, IRION:							
Daily average	68	.....	.....	.....	132	120	
Month	2,100	.....	.....	.....	4,078	3,604	9,782
PECOS VALLEY, PECOS:							
Daily average	76	142	127	142	197	197	
Month	2,361	3,967	3,928	5,257	6,109	5,914	27,536
PENN, ECTOR:							
Daily average	607	820	4,004	7,632	14,334	18,510	
Month	18,815	24,965	124,121	228,970	444,352	555,296	1,396,519
TAYLOR-LINK, PECOS:							
Daily average	6,937	7,171	5,235	5,249	4,267	3,735	
Month	215,082	200,794	162,296	157,460	132,274	112,166	980,073
TAYLOR, TAYLOR:							
Daily average	116	115	115	99	109	30	
Month	3,600	3,316	3,650	2,961	3,383	900	17,810
PHILLIPS-PRYOR, PECOS:							
Daily average	39	.....	.....	.....	.....	.....	
Month	1,215	.....	.....	.....	.....	.....	1,215
TOBORG, PECOS:							
Daily average	237	554	965	1,492	1,887	1,313	
Month	7,332	15,481	29,920	44,757	58,486	39,402	195,378
WADDELL, CRANE:							
Daily average	.....	36	33	30	29	33	
Month	.....	1,106	1,022	885	892	1,006	4,911
DEEP ROCK:							
Daily average	.....	.....	.....	.....	.....	199	
Month	.....	.....	.....	.....	.....	5,984	5,984
Daily average	342,222	341,938	335,892	314,560	311,668	304,341	324,937
Total first six months 1930	10,608,883	9,574,215	10,412,647	9,436,801	9,661,721	9,130,220	58,824,487
Total first six months 1929	11,380,341	9,966,066	11,609,104	10,599,784	10,990,292	10,987,539	65,533,126
Total first six months 1928	8,821,701	9,036,190	10,380,877	11,149,642	9,873,668	8,947,700	58,209,778
Total first six months 1927	2,126,352	1,857,800	2,331,510	2,752,080	3,514,935	3,333,150	15,915,827

R-BESSEMER

10

NOMIZER

Steadier Operation
2-Cycle Simplicity
Sound Engineering

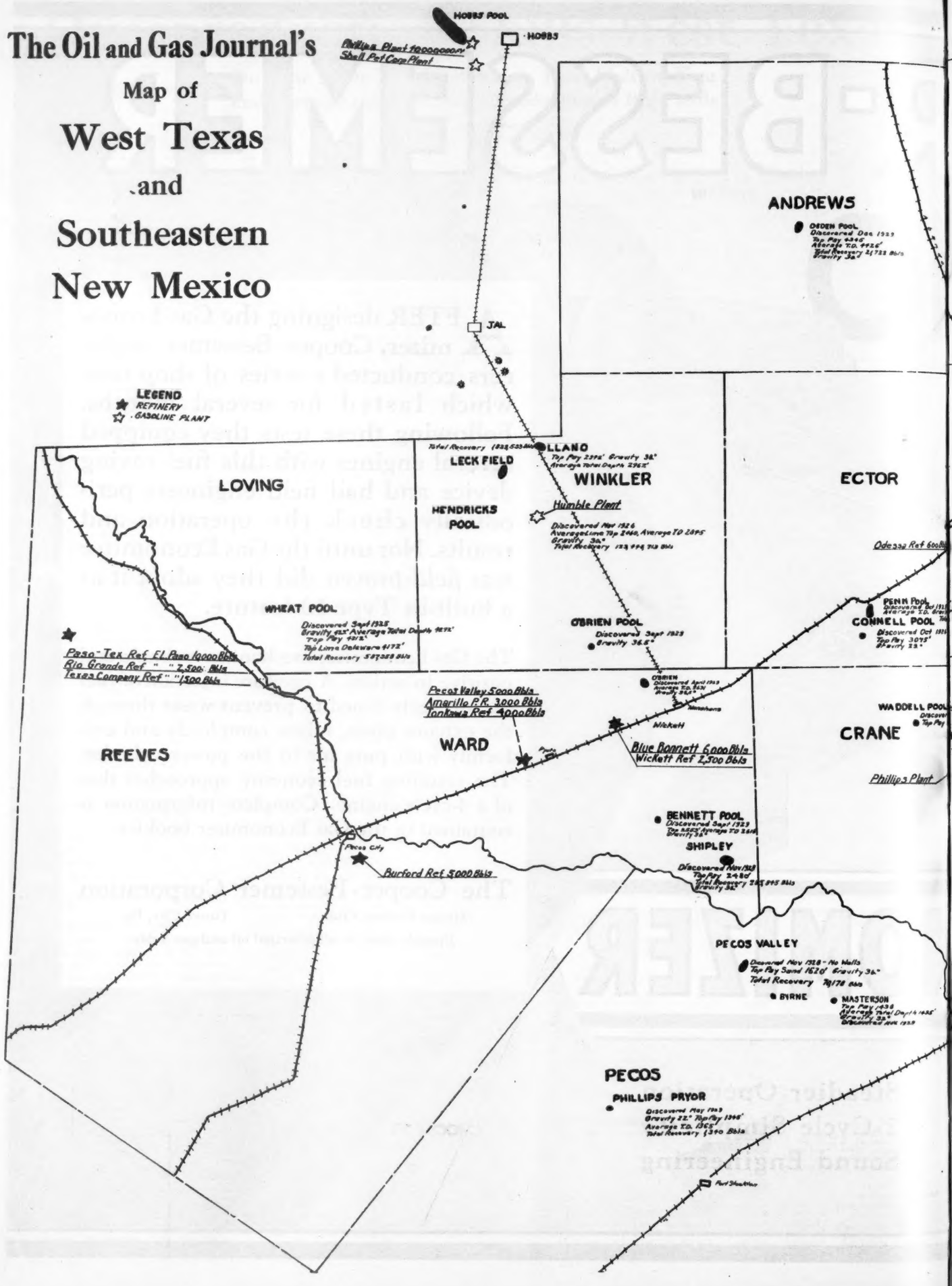
AFTER designing the Gas Economizer, Cooper-Bessemer engineers conducted a series of shop tests which lasted for several months. Following these tests they equipped several engines with this fuel saving device and had field engineers periodically check the operation and results. Not until the Gas Economizer was *field-proven* did they adopt it as a built-in Type-10 feature.

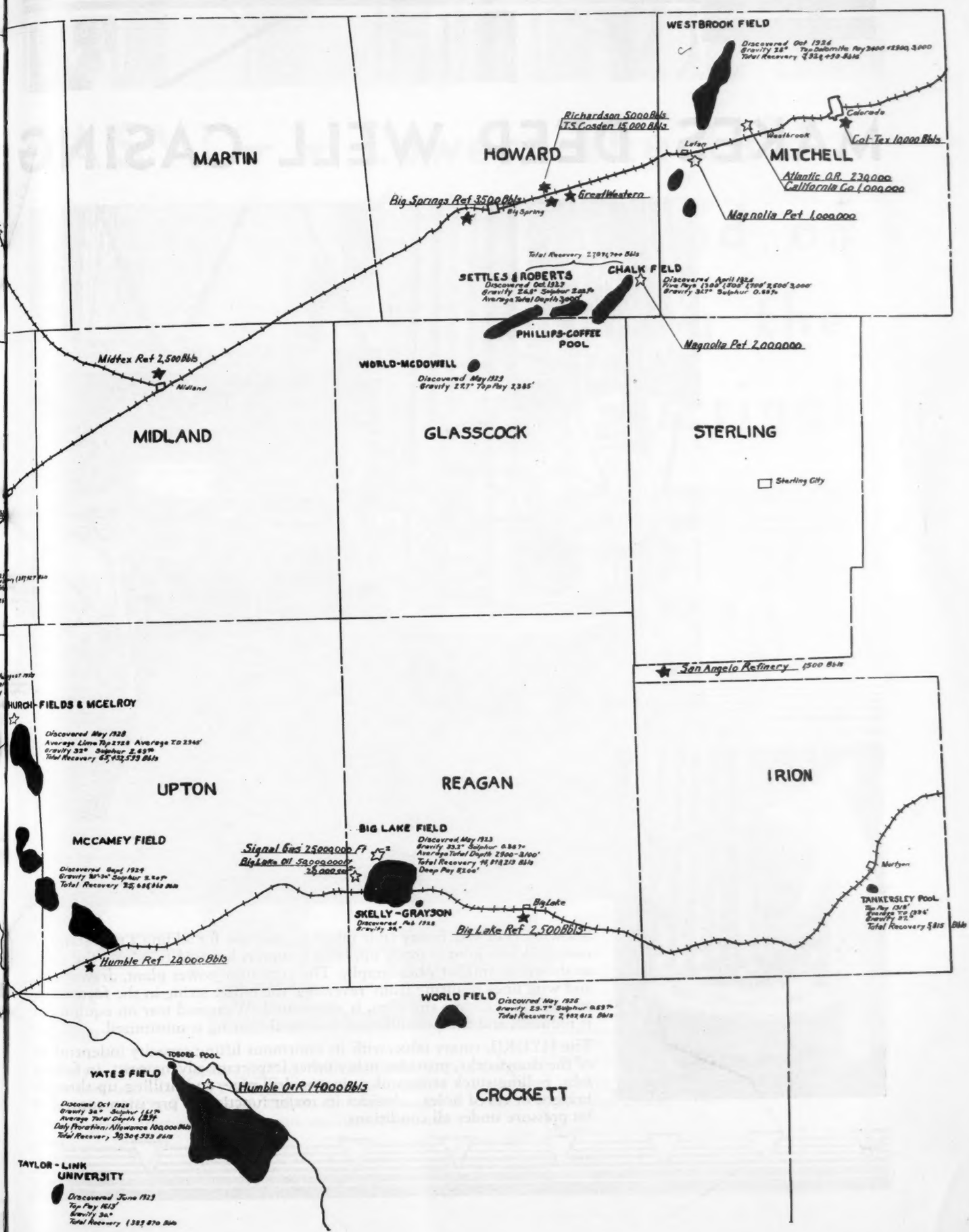
The Gas Economizer mechanism is simple and positive in action. A pressure injection of fuel gas, properly timed to prevent waste through the exhaust ports, mixes completely and uniformly with pure air in the power cylinder. The resulting fuel economy approaches that of a 4-cycle engine. Complete information is contained in the Gas Economizer booklet.

The Cooper-Bessemer Corporation

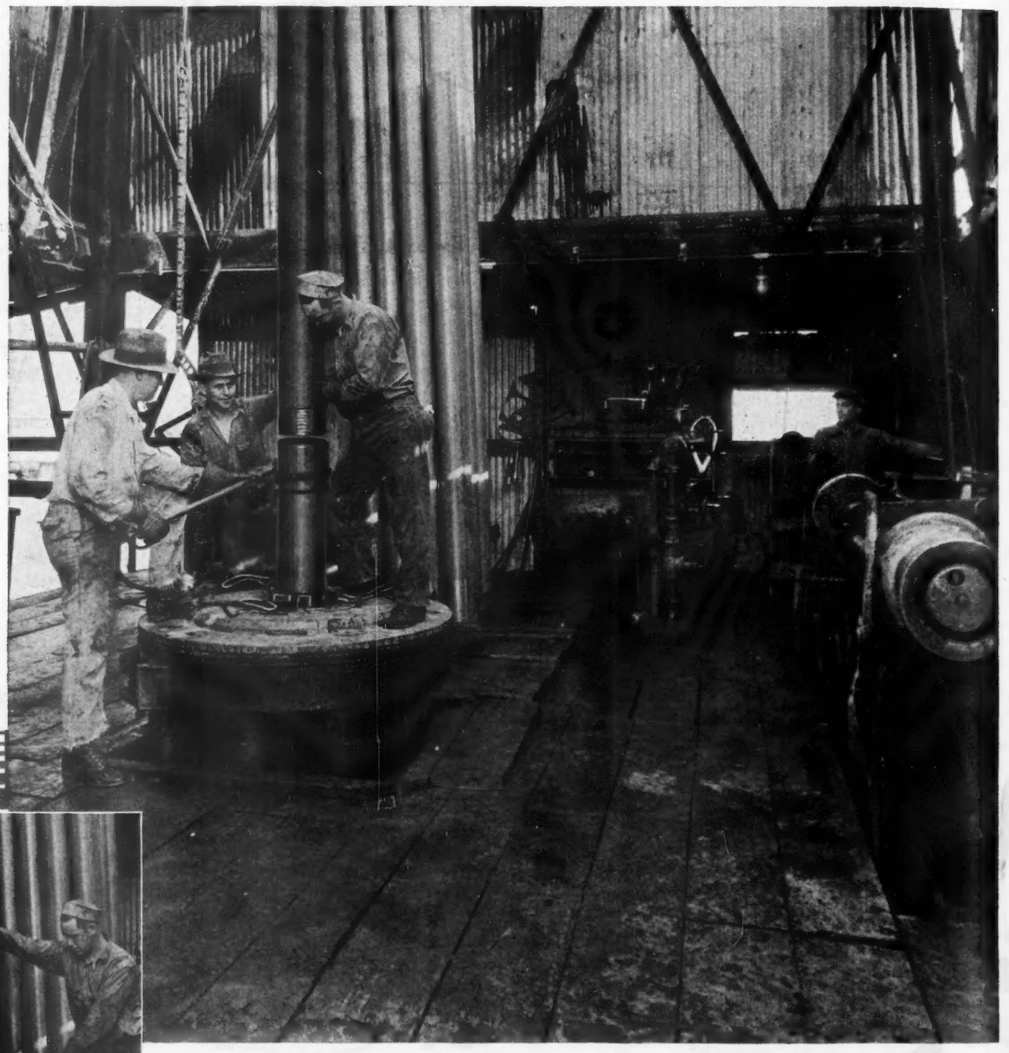
Mount Vernon, Ohio Grove City, Pa.

Branch offices in all principal oil and gas fields


The Oil and Gas Journal's
Map of
West Texas
and
Southeastern
New Mexico
HOBBS POOL
HOBBS
Phillips Plant 10000 Bbls
Shell Pet Corp Plant
ANDREWS
OSDEN POOL
Discovered Dec 1929
Top Pay 6345'
Average T.D. 9926'
Total Recovery 24,733 Bbls
Gravity 36°
JAL
LEGEND
REFINERY
GASOLINE PLANT
LLANO
Top Pay 2398' Gravity 38°
Average Total Depth 2962'
LECK FIELD
WINKLER
ECTOR
LOVING
HENDRICKS POOL
Humble Plant
Discovered Nov 1926
Average Low Top 2460, Average TD 2695'
Gravity 36°
Total Recovery 123,994,713 Bbls
Odessa Ref 6000 Bbls
PENN Pool
CONNELL POOL
Discovered Oct 1926
Top Pay 3075'
Gravity 33°
WHEAT POOL
Discovered Sept 1925
Gravity 45° Average Total Depth 4672'
Top Pay 4012'
Top Lime Delaware 4172'
Total Recovery 587,388 Bbls
O'BRIEN POOL
Discovered Sept 1929
Gravity 36.6°
El Paso-Tex Ref. El Paso 10000 Bbls
Rio Grande Ref " " 7,500 Bbls
Texas Company Ref " " 1500 Bbls
O'BRIEN
Discovered April 1929
Average T.D. 2430
Gravity 34.4°
Pecos Valley 5000 Bbls
Amarillo P.R. 3000 Bbls
Tonkawa Ref 4000 Bbls
WADDELL POOL
Top Pay
CRANE
WARD
REEVES
Blue Bonnett 6000 Bbls
Wickett Ref 2,500 Bbls
Phillips Plant
BENNETT POOL
Discovered Sept 1929
Top Pay 2425' Average T.D. 2565'
Gravity 38°
SHIPLEY
Discovered Nov 1928
Top Pay 2480'
Total Recovery 245,895 Bbls
Gravity 32°
Pecos City
Burford Ref 5000 Bbls
PECOS VALLEY
Discovered Nov 1928 - No Wells
Top Pay Sand 1620' Gravity 36°
Total Recovery 79,178 Bbls
BYRNE
MASTERSON
Top Pay 1434
Average Total Depth 1635'
Gravity 32°
Discovered June 1929
PECOS
PHILLIPS PRYOR
Discovered May 1929
Gravity 32° Top Pay 1346'
Average T.D. 1365'
Total Recovery 1390 Bbls


WESTBROOK FIELD
Discovered Oct 1926
Gravity 36° Top Dolomite Pay 2600 +2900, 3000
Total Recovery 7,324,498 Bbls
Richardson 5000 Bbls
T.S. Cosden 15,000 Bbls
Colorado
Cat-Tex 10000 Bbls
Westbrook
Loraine
MARTIN
HOWARD
MITCHELL
Atlantic Q.R. 230,000
California Co 1,000,000
Big Springs Ref 3500 Bbls
Big Spring
Great Western
Magnolia Pet 1,000,000
Total Recovery 27,076,700 Bbls
SETTLES & ROBERTS
Discovered Oct 1923
Gravity 26.8° Sulphur 2.0%
Average Total Depth 3000'
CHALK FIELD
Discovered April 1926
Pays 1300' 1500' 1700' 2,500' 3,000'
Gravity 34.7° Sulphur 0.69%
PHILLIPS-COFFEE POOL
Magnolia Pet 2,000,000
Midtex Ref 2,500 Bbls
Midland
WORLD-McDOWELL
Discovered May 1929
Gravity 27.7° Top Pay 2,385'
MIDLAND
GLASSCOCK
STERLING
Sterling City
San Angelo Refinery 4500 Bbls
HURCH-FIELDS & MCELROY
Discovered May 1928
Average Lime Top 2725 Average T.D. 2945'
Gravity 32° Sulphur 2.69%
Total Recovery 65,433,539 Bbls
UPTON
REAGAN
IRION
MCCAMEY FIELD
Discovered Sept 1929
Gravity 36.3° Sulphur 2.0%
Total Recovery 25,688,366 Bbls
BIG LAKE FIELD
Discovered May 1923
Gravity 35.3° Sulphur 0.36%
Average Total Depth 2900-3100'
Total Recovery 96,878,213 Bbls
Deep Pay 8200'
Signal Gas 25000000 Ft
Big Lake Oil 50000000
25,000,000
SKELLY-GRAYSON
Discovered Feb 1928
Gravity 38°
Big Lake
Big Lake Ref 2,500 Bbls
Humble Ref 20,000 Bbls
Mertzon
TANKERSLEY POOL
Top Pay 1318'
Average T.D. 1996'
Gravity 32.5°
Total Recovery 5815 Bbls
WORLD FIELD
Discovered May 1925
Gravity 29.7° Sulphur 0.63%
Total Recovery 2,982,612 Bbls
TOBORG POOL
YATES FIELD
Humble Q&R 14000 Bbls
CROCKETT
Discovered Oct 1924
Gravity 34.7° Sulphur 1.17%
Average Total Depth 1834'
Daily Proration Allowance 100,000 Bbls
Total Recovery 39,304,593 Bbls
TAYLOR-LINK UNIVERSITY
Discovered June 1923
Top Pay 1813'
Gravity 34.1°
Total Recovery 1,383,870 Bbls

MAKES DEEP WELL CASING



Showing HYDRIL rotary table raised in position for adding a new stand of casing. When joint is made up, table is merely lowered to release the slips, as shown in smaller photograph. The strain on power plant, drawworks, and wire lines resulting from "reversing" the entire string in the formation, and lifting it to free the slips, is eliminated. Wear and tear on equipment is reduced, and the possibility of parting the string is minimized.

The HYDRIL rotary table, with its enormous lifting capacity independent of the drawworks, provides many other important advantages... in fishing jobs, pulling stuck strings of casing or drill pipe, and drilling up through bridged or caved holes... besides its major function of precision control of bit pressure under all conditions.

HYDRIL

EASY! ▼ ▼ Lowers the table instead of lifting the ▼ ▼ string!

HYDRIL is made with extra power and capacity to handle casing and all other operations for wells 12,000 feet deep ...allowing a reserve which takes care of the longest and heaviest strings in present use with ease. Two recent typical HYDRIL casing runs:

SANTA FE SPRINGS: 7490 feet of 9-inch 54-pound A.P.I. casing, total weight 202.2 tons.

KETTLEMAN HILLS: 5453 feet of 13⅜-inch 74-pound A.P.I. casing, total weight 201.9 tons.

These runs were made with the HYDRIL drawworks and lines in the regular way.

HYDRIL ELIMINATES LIFTING STRING

The use of the HYDRIL rotary table makes it unnecessay to lift the entire string in order to free the slips.

The table is raised about a foot when making up a new joint. Then the weight is merely held by the lines, and the table is lowered by means of the hydraulic control until the slips are free.

This exclusive HYDRIL feature not only makes it possible to handle strings of casing heavier than the drawworks and lines could safely lift against friction of the formation... but greatly reduces the strain and wear on engine, drawworks, and lines... one of many factors which combine to make HYDRIL the fastest, safest, and most economical oil well drilling equipment in the industry.

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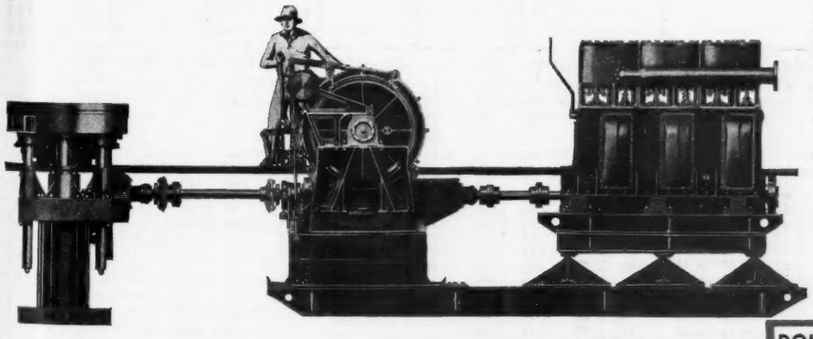
Cable Address . . . HYDRIL Los Angeles



Complete HYDRIL equipment includes Hydraulic Rotary Table, 6-Speed Drawworks and 3-Cylinder Vertical Steam Engine as illustrated. HYDRIL operates equally well with steam, Gasoline or Diesel Engine or Electric Motor. Rigid structural frame for quick installation, optional.

Send the coupon for this scientific treatise which gives valuable information about drilling straight holes.

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714 West Tenth Street, Los Angeles, Calif.

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*Address*_____

STABILIZATION WAS CALIFORNIA FEATURE

(Continued from Page 124)

Coast. In the short period of a few weeks beginning late in June gasoline prices tumbled all the way from 7 to 20 cents per gallon, bringing the retail service price in Los Angeles territory down from 19½ cents per gallon to 9½ cents. These quotations include a 3-cent gasoline tax and the customary 4-cent differential allowed resellers, leaving less than 2 cents per gallon for the manufacturer. In the Pacific Northwest even more drastic reductions were made and at one point in California during the price war gasoline was retailed for 3 cents per gallon, which is just the amount of the state gasoline tax. This period of uneconomic competitive selling was brought to a close July 12 when the Standard Oil Co. restored the original price at all of its stations on the Pacific Coast, although several days elapsed before resellers came back into line.

This price war, which lasted longer than usual and reached more serious proportions because of the drastic reductions made, did not come as a surprise to those in close touch with marketing conditions as it was the inevitable outcome of a situation which was basically unsound and susceptible of readjustment. The major companies and a number of progressive independent refiners, in an effort to stabilize conditions, had been cutting back production and storing crude and refined oils for several years while another group of independent refiners has been building up gallonage by consistently underselling standardized quotations from 1 to 4 cents per gallon. The situation became so acute that the group endeavoring to maintain stabilized quotations issued orders to meet competition but not to cut below the prices offered by competitors. The result was that every time one of the majors came down in price the independents followed it down and thus maintained the price advantage. This jockeying back and forth ultimately carried the price down to the point where no further reductions in gasoline quotations were possible.

Obstinate Few

On top of this unhealthy condition in marketing conditions the stability of the industry was jeopardized by a number of producers who have consistently refused to curtail production. These operators sold their allowable curtailed production to the major refiners at the regular posted price for crude oil and then turned around and sold the excess production to smaller independent refiners at a price considerably below market on the assumption that 50 or 75 cents a barrel for the excess was better than nothing. These independent refiners because of this advantage in the low cost of raw material then turned around and distributed gasoline below the general posted price. It proved an endless chain and was bound to result in a demoralized marketing condition which, because of competition, must of necessity ultimately have led to lower prices. This condition still exists and will undoubtedly lead to further price recessions at a later date after the industry has recuperated from the losses sustained in the recent titanic struggle.

As long as overproduction exists in California periodic price wars can only be averted in one way, but it is not likely that this condition will materialize. Crude oil production has been fairly well stabilized and the same degree of stabilization can only be achieved by standardized prices and a uniform differential allowance to service station operators. As long as independent refiners resort to price cutting or the allowance of an excessive differential to service station operators which permits them to undersell, no permanent degree of stability will result. A certain amount of bootleg competition can always be expected but this factor alone will not demoralize the price structure if legitimate refiners stabilize quotations. It is decidedly unfair for smaller refiners to undersell standardized quotations even though they may be in a position to manufacture and distribute gasoline a cent or two cheaper. This deduction is of course diametrically opposed to economic law but at the same time it is fundamentally sound from a stabilization standpoint on which the entire price structure depends. It is quite obvious to those familiar with the vast amount of potentially productive oil land in California that no independent refiner could make gasoline as cheap as the larger companies if they wish to draw on some of the reserves which are being held back until a more propitious time.

Big Companies Conservative

The Standard Oil Co., Associated, General Petroleum, Continental and other operators holding highly productive acreage at Kettleman Hills could dump gasoline on the Pacific Coast market at less than 10 cents per gallon and still make money. The Union and Shell, controlling practically the entire productive acreage at Dominguez, could also produce gasoline considerably cheaper by sacrificing future profits if necessity demanded. It might not be amiss to mention in this connection that the Standard's holdings at Kettleman Hills is fee acreage and consequently free of the usual lease royalty. The Union's highly productive Stearns lease in the Brea Olinda Field, which has been held back for a number of years in the interest of conservation, is also owned in fee. This property, a large part of which is undrilled, has a larger potential than many anticipate as it is capable of producing at least 15,000 bbls. per day with the limited development undertaken up to the present time. This passing mention of fee owned acreage and the ability of major companies to refine gasoline at lower cost is merely cited to show that the present price of gasoline is absolutely dependent on stabilization of production. Major companies and independent refiners are mutually benefited by stabilization. The larger companies, with several hundred million barrels of oil held in reserve in deep virgin zones, maintain that independent refiners should sell gasoline on its merits through advertising or other legitimate channels instead of cutting the price. The logic to this position is apparent by a casual glance at the price structure since 1921 and the frequency of gasoline price wars. Gasoline sales on the Pacific Coast during the past few years revealed the vast inroads made by independent refiners in the sales of larger companies. A large part of this displaced gallonage has been acquired by independent refiners through price cutting tactics. Competition is always desirable but at the same time it must be on a sound basis. In order to prevent any misconception of opinion or prejudicial views, it might not be amiss to say that the major companies have at times been guilty of unethical conduct just as well as independent refiners. Out of the chaos and demoralization resulting from the recent price war, one cannot but be impressed by the absolute necessity of maintaining a stabilized price for gasoline, because if any serious discrepancy exists in the future further competitive struggles for gallonage are inevitable.

Production Kept Down

Production of crude oil showed a consistent drop in California during the first half of the current year due, as has already been stated, to more effective curtailment work and a natural decline in flush fields. During January, 1930, production averaged 709,137 bbls. per day and while the State's output increased the following month to 745,916 bbls. per day, this was due entirely to the conducting of a six-day open flow test under supervision of the operators general committee in order to determine California's total actual potential so that future curtailment might be applied ratably. This flow test revealed that the State's potential had been carried far too high as Santa Fe Springs failed to come anywhere near attaining its rated potential. The Elwood Field of Santa Barbara County, on the other hand, exceeded its rated theoretical potential daily production but the difference between actual and theoretical potential production of Santa Fe Springs more than offset this surprise. It became very evident within 24 hours after the test had got under way at Santa Fe Springs that this field had gone over the top during the curtailment period about 30 days previously and was already headed for a definitely lower level. This proved quite surprising to many as curtailment work prevented the field from reflecting its exact status in as much as daily production was a pegged figure subject to manipulation of wells from day to day and therefore did not register the violent fluctuations accompanying unrestricted production and development of a large flush field.

Potential 850,000 Bbls.

It might not be amiss to venture the opinion that the potential production of 1,000,000 bbls. assigned to California is too high. It is doubtful if California could produce more than 850,000 bbls. per day at the present time, although it is generally admitted that California could produce over 1,500,000 bbls. per

(Continued on Page 171)

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co.

Gravity—	1 Seal Beach, Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Huntington Beach, Signal Hill, Inglewood		2 Whittier, La Habra, Coyote Hills		3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills		4 Montebello		5 Santa Fe Springs				6 Santa Maria, Coalinga		7 Wheeler Ridge, Fruitvale		8 Orcutt, Ventura, Rincon		9 Ventura Ave.,* Potrero†		10 Elwood Terrace		11 Athens, Rosecrans, Dominguez	
	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11	May 17	June 14	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11	Jan. 1	Mar. 11
14 to 14.9	.70	.70	.70	.70	.50	.55	.70	.70	....	....	....	....	.50	.55	.50	.55	.65	.55	.40	.70	....	....	....	.70
15 to 15.9	.70	.70	.70	.70	.50	.55	.70	.70	....	....	....	....	.50	.55	.50	.55	.65	.55	.40	.70	....	....	....	.70
16 to 16.9	.70	.70	.70	.70	.50	.55	.70	.70	....	....	....	....	.50	.55	.50	.55	.65	.55	.40	.70	....	....	....	.70
17 to 17.9	.70	.70	.70	.70	.50	.55	.70	.70	....	....	....	....	.50	.55	.50	.55	.65	.55	.40	.70	....	....	....	.70
18 to 18.9	.75	.76	.75	.76	.56	.62	.70	.71	....	....	....	....	.56	.62	.56	.62	.70	.65	.40	.76	....	....	....	.75
19 to 19.9	.80	.82	.80	.82	.62	.70	.75	.77	....	....	....	....	.62	.70	.62	.70	.70	.70	.40	.82	....	....	....	.80
20 to 20.9	.85	.88	.84	.87	.68	.78	.80	.83	....	....	....	....	.68	.78	.68	.78	.70	.78	.40	.88	....	....	....	.85
21 to 21.9	.89	.94	.88	.93	.74	.86	.85	.90	.89	.92	.50	.92	.74	.86	.74	.86	.86	.90	.40	.91	....	....	....	.89
22 to 22.9	.93	1.00	.91	.98	.80	.94	.90	.97	.92	.95	.50	.95	.80	.94	.80	.94	.87	.95	.40	.94	....	....	....	.93
23 to 23.9	.97	1.07	.94	....	.85	1.02	.95	1.05	.95	1.01	.50	1.01	.85	1.02	.85	1.02	.90	1.02	.40	1.00	....	....	....	.97
24 to 24.9	1.01	1.14	.97	....	.90	1.09	.98	1.11	.98	1.07	.50	1.07	.88	1.07	.88	1.07	.94	1.10	.40	1.07	....	....	1.01	1.14
25 to 25.9	1.05	1.21	1.00	....	.95	1.16	1.01	1.17	1.01	1.13	.50	1.13	.91	1.12	.91	1.12	.98	1.18	.60	1.14	....	....	1.05	1.19
26 to 26.9	1.09	1.28	1.04	....	1.00	1.23	1.04	1.23	1.04	1.19	.50	1.19	.94	1.17	.94	1.17	1.02	1.26	.60	1.21	....	....	1.09	1.24
27 to 27.9	1.13	1.35	1.08	....	1.05	1.30	1.07	1.29	1.07	1.25	.50	1.25	.98	1.23	.97	1.22	....	....	.60	1.28	....	....	1.13	1.29
28 to 28.9	1.17	1.42	1.12	....	1.10	1.35	1.10	1.35	1.10	1.31	.56	1.31	1.02	1.27	....	....	....	....	.60	1.35	....	....	1.17	1.34
29 to 29.9	1.21	1.46	1.16	....	1.16	1.41	1.13	1.38	1.15	1.37	.62	1.37	1.06	1.31	....	....	....	....	.60	1.39	....	....	1.21	1.39
30 to 30.9	1.25	1.50	1.20	....	1.22	1.47	1.16	1.41	1.20	1.43	.68	1.43	1.10	1.35	....	....	....	....	.60	1.43	....	....	1.25	1.45
31 to 31.9	1.30	1.55	....	....	1.28	1.52	....	....	1.25	1.49	.74	1.49	1.14	1.39	....	....	....	....	.60	1.48	....	....	1.30	1.51
32 to 32.9	1.35	1.60	....	....	1.34	1.59	....	....	1.30	1.55	.80	1.55	1.18	1.43	....	....	....	....	.60	1.53	....	....	1.35	1.57
33 to 33.9	1.41	1.65	....	....	1.40	1.65	....	....	1.35	1.60	.85	1.60	1.22	1.47	....	....	....	....	.60	1.59	....	....	1.41	1.64
34 to 34.9	1.47	1.70	....	....	1.46	....	....	....	1.40	1.65	.90	1.65	1.26	1.51	....	....	....	....	.60	1.65	1.16	1.32	1.47	1.71
35 to 35.9	1.53	1.75	....	....	....	....	....	....	1.45	1.70	.95	1.70	1.30	1.55	....	....	....	....	.60	1.71	1.22	1.39	1.53	1.78
36 to 36.9	1.59	1.80	....	....	....	....	....	....	1.50	1.75	.95	1.75	....	....	....	....	....	....	.60	....	1.28	1.46	1.50	1.84
37 to 37.9	1.65	1.85	....	....	....	....	....	....	1.55	1.80	.95	1.80	....	....	....	....	....	....	.60	....	1.34	1.53	1.65	1.90
38 to 38.9	1.71	1.90	....	....	....	....	....	....	1.60	1.85	.95	1.85	....	....	....	....	....	....	.60	....	1.40	1.60	1.71	1.96
39 to 39.9	1.77	....	....	....	....	....	....	....	1.65	1.90	.95	1.90	....	....	....	....	....	....	.60	....	1.46	1.66	1.77	2.02
40 to 40.9	1.83	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.60	....	1.52	1.72	1.83	2.08
41 to 41.9	1.89	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.60	....	1.58	1.78	1.89	2.14
42 to 42.9	1.95	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.60	....	1.64	1.84	1.95	2.20

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity; Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 4—Oil below 14 gravity posted at 45 cents.

Columns 5 and 9—Posted by Union Oil Co. only.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).

Great Field Opened in New Mexico

Hobbs Area in Lea County the Most Important Development in Rocky Mountain Division Since Salt Creek, Wyoming

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

The major development in the Rocky Mountain area in the first half of 1930 was the opening up of the Hobbs Pool in Lea County, New Mexico, which early in July had a total of 24 wells estimated capable of producing 120,000 bbls. of oil per day, the biggest well being estimated at 20,000 to 25,000 bbls. with several of them in the 10,000-bbl. class. Three pipe lines have been or are building in and just as the field threatened a crisis an agreement to prorate production was reached. Wildcatting in New Mexico showed a decline, though several pools of undetermined importance are now definitely located.

Utah again scored a blank. Two wells completed were dry.

Colorado had four new gas areas opened up in wildcats and two of these were still holding out hopes of developing oil production. There were no new oil pools discovered, or important extensions of producing pools, and several structural tests were abandoned as failures.

Wildcatting in Wyoming largely consisted of deeper drilling in proven areas to explore untested formations. A deep test in Salt Creek developed a flow of 1,850 bbls. a day in a new horizon in the Tensleep and this formation was also proven in several tests in Carbon and Sweetwater Counties, in which a good grade of oil was found. The Osage Field in the northeastern part of the State brought in a new pool.

NEW MEXICO

Hobbs Pool—Lea County

The Hobbs Pool in Lea County, New Mexico, leaped from a comparatively obscure position to first place among the operations in the Rocky Mountain area in the first six months of 1930. Up to January 1, 1930, six wells had been completed, of which five were producers and one was a dry hole. The producers averaged 532 bbls. initial and these were believed to indicate the size and importance of the pool. However, during the first six months of 1930 development disclosed that these earlier wells were on the southeastern end of the high and that farther to the northwest was a large area where 8,000 to 10,000-bbl. wells were the rule rather than the exception. This development proved that Hobbs was not only the most important discovery made in the Rocky Mountain area since Salt Creek, but that it was a major operation that would exert an economic influence on the entire oil structure. At the end of June, 1930, 16 wells with an aggregate potential production of between 50,000 and 60,000 bbls. a day had been completed as producers; only 2 wells had been failures, 39 wells were drilling and 9 new locations had been made. The first week in July jumped the estimated potential production up to 120,000 bbls. a day from a total of 24 wells.

The elevation of Hobbs into a major operation at once confronted the operators with some serious problems as to the handling of the field at a time when the industry was burdened with an overproduction of crude and strenuous efforts were being made to conserve the crude in the ground in Texas, Oklahoma, Kansas, California and other states through proration and drilling agreements. Most of the land in the Hobbs Pool is owned by the United States Government and the State of New Mexico. Before any definite policy could be adopted, the operators had to be in harmony themselves and any plan they might adopt would have to be approved by the federal and state agencies before it could be put into effect. When it was found that the field was destined to become an operation of major importance, the first steps were directed towards reaching an agreement as to the drilling of wells. The Department of the Interior, which viewed the matter from a national standpoint, looked with favor upon the plan, but the State of New Mexico was in a different position. It has a comparatively small population, an immense acreage of state land, heavy taxes and no oil fields yielding a large revenue to the State comparable with some of the other oil-producing states. Its officials felt they were justified in insisting upon unrestricted development of the field so that even under proration it would have a substantial revenue from oil royalties. As a result, the drilling program was then inaugurated. When these wells began coming in, efforts were directed towards some proration agreement, and early in July an agreement was reached whereby a proration program will be put into effect at once. The state governmental officials saw the wisdom of co-operating with producers to keep production down to industrial demand and early in July the State and the operators got together and made tentative plans which were to be discussed more fully at a later meeting.

Pipe Line Outlets

The Humble Pipe Line Co. was the first to reach the field with a pipe line, its entrance being made through an 8-inch line north from Jal where it had a connection with its system in West Texas. The Atlantic Pipe Line Co. was building a 10-inch line from Midland, Tex., entering New Mexico from the east, and the Shell Pipe Line Co. was building up from a point north of Jal where it had arranged for a connection with the Texas Pipe Line Co.'s system. The Texas Pipe Line Co., in the meantime, was holding in abeyance its plans to extend into the Hobbs Field. Another line to reach the district shortly probably will be an extension of the Winkler County-El Paso line of the Pasotex Pipe Line Co. In the meantime, the Atlantic and Shell companies were erecting tank farms to store such oil as they could not move until their lines were in operation and the Humble company was running its oil and the oil from the Walker Oil Corp. wells. The Phillips Petroleum Co. is preparing for the erection of a gasoline plant in the field; a new railroad from Monahans, Tex., was completed through eastern Lea County by way of Hobbs to Lovingston; airplane service with oil centers was established and several townsite projects were developing into towns of considerable importance.

Long in Developing

The discovery well was completed in the field in the fall of 1928 by the Midwest Refining Co. in its No. 1 State, NE cor., Section 9-19-38. It averaged 696 bbls. a day on a 15-day test from the pay at 4,202-20 feet. The top of the salt was at 1,625 feet, the bottom at 2,450 feet and the top of the lime at 3,883 feet. Subsequently this well was deepened to 4,245 feet and ran into sulphur water which was plugged off and the well restored as a producer. The Midwest is credited not only with the drilling in of the discovery well, but of having worked out the geology solely by geophysical methods, this being the first oil field outside of the salt domes in the Gulf Coast region found in that manner. The Midwest in 1929 drilled a diagonal offset on the northeast in its No. 31 Capps, SW cor., Section 3-19-38, and completed it at 4,220 feet with an initial production of 850 bbls. a day. The oil in these wells, as in the field generally, averages around 36 gravity, has comparatively little sulphur, and is considered a much better refining stock than the West Texas crudes. The Walker Oil Corp. then went a mile to the southeast of the discovery and towards the end of 1929 drilled in its No. 1 Terry, NW SW SE, Section 10-19-38, which made 525 bbls. of 35.8 gravity oil

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Old Eastern Fields Overproduced

Lively Half Year in the Field Together With Repressuring Brought Price Cuts and Curtailment Movement

By Leon H. Walter

Eastern field operations during the first half of 1930 were made notable through the intensive flood water program in the Bradford, Pa., and Allegany, N. Y., Fields. In other districts of the area operations were uneventful with no new pools discovered and only one worthwhile extension developed.

In the Bradford and Allegany Fields the five-spot drilling program was carried on intensively during the first five months of the year with a resultant increase in production which was blamed for an overabundance of Pennsylvania grade crude oil. On May 16 the operators in that area agreed upon a 20 per cent curtailment of runs based on April production, the peak month in the output. The curtailment program was extended during June. During July and August a 50 per cent reduction has been agreed upon and drilling programs have been slackened to a great extent.

In the northeast district of the eastern field, comprising five areas, there were 1,612 completions in the first six months with a production of 2,686 bbls. daily, 33 dry holes and 30 gas wells. In the southwest district of the eastern field, comprising three areas, there were 830 completions with 9,705 bbls. production, 153 dry holes and 260 gas wells, making a total for the eastern field of 2,442 completions, 12,391 bbls. production, 186 dry holes and 290 gas wells.

Total producers' runs in the Allegany Field for June averaged 8,570 bbls. daily comparable with 9,861 bbls. for April and 9,880 bbls. for May. The production for April was accepted as the basis for the curtailment of producers' runs, hence the June figures show a decline of 13.3 per cent.

Total producers' runs in the Bradford Field for June averaged 26,750 bbls. daily comparable with 32,450 bbls. for April and 31,163 bbls. for May. The decrease, based on April production, is 17.5 per cent.

The producers' curtailment reduced the daily runs during June in both fields 6,991 bbls. or 16.5 per cent, based on April production. The total of the reduced runs is greater than was generally anticipated would result since no effort was made to secure the co-operation of the producers controlling less than 25 bbls. daily. The total of such production is considerable and it is evident that the interests producing the larger amount of crude reduced their runs considerably in excess of the 20 per cent figure that was generally adopted.

The producers' association of both fields recommended a curtailment of 50 per cent to be effective for July and August, and while this rate had been in effect but one week up to this writing, the result was reflected in the pipe line runs, as they report that the production was reduced fully 50 per cent for the first eight days of July comparable with April. The producers of the northern area believe that if they receive co-operation from the producers of the southern Pennsylvania area it will be possible to properly stabilize Pennsylvania crude and bring the total production promptly in line with the refinery demand.

Little Drilling in Last Half

There has been a general shutting down of drilling operations throughout both Bradford and Allegany Fields. It has been estimated that after this month there will not be more than 50 strings of tools running and that no new contracts will be let, which will cancel all development programs, so that the only problem that will need to be solved is the production that will be offered from the five-spot developments that were drilled during the last 12 months. It is believed that a large part of the heavy production of many of these programs has already been marketed and since there will be no repetition of the overdrilling as has been experienced during the past two years, it is apparent that after the next few months have elapsed there will not be any threat of overproduction of this valuable product.

Producers Not Gloomy

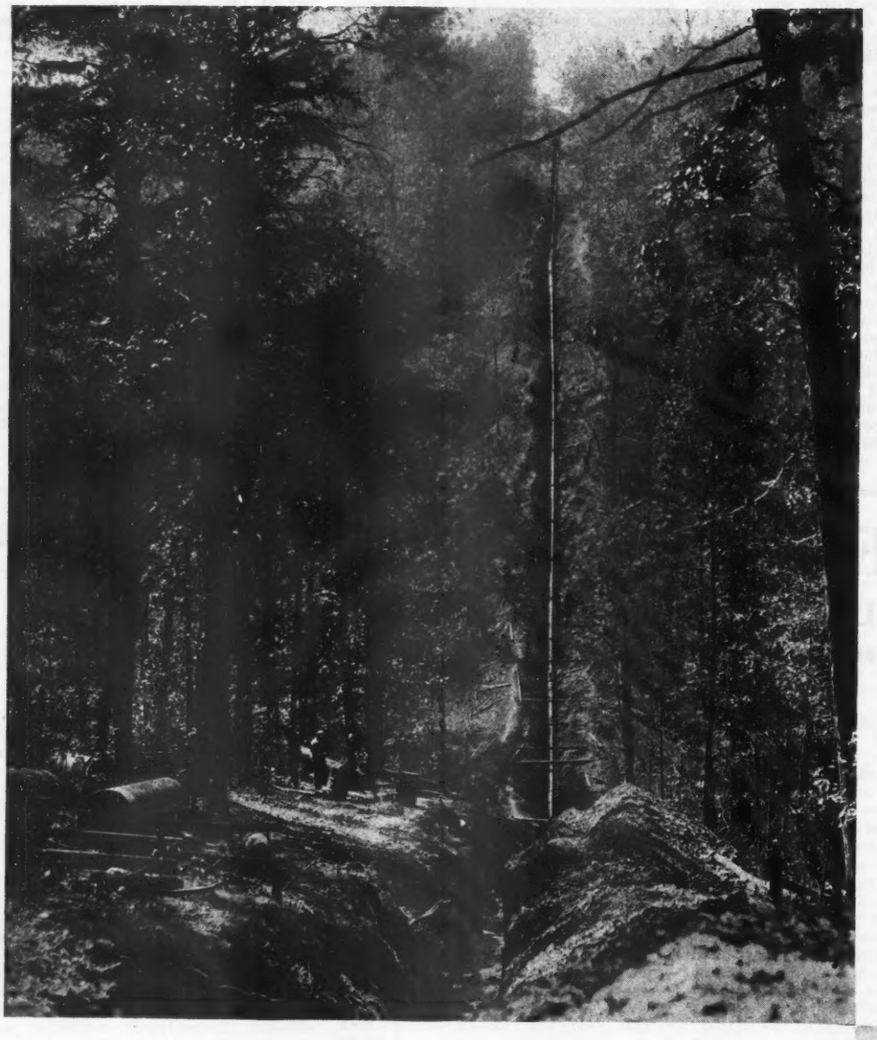
The producers have now learned the amount of crude they can produce per acre, and will undoubtedly set up firm plans not to overproduce their market hereafter. The amount of crude, however, that can be promptly offered from the Allegany and Bradford areas justifies efficient Pennsylvania refineries and strong market outlets, and the producers feel that benefit will accrue to them through the general knowledge of all Pennsylvania refiners that they can justify new equipment and greater outlay through the assurance that an ample supply of Pennsylvania crude will be available for at least the next 25 years. There is no gloom in the Bradford and Allegany areas as the producers are confident they will be able to correct all improper conditions this month and that with the return of industrial activity throughout the country Pennsylvania crude will maintain its proper market price for both crude and refined products.

EASTERN FIELDS

Completed Wells in First Half of 1930

Field—	Comp.	Prod.	Dry	Gas
Allegany	172	435	5	1
Bradford	1,247	2,021	0	1
Middle	22	64	1	1
Venango-Clarion	113	111	13	20
Butler-Armstrong	58	55	14	13
Southwest Pennsylvania	94	225	21	30
Southeast Ohio	402	8,143	71	71
West Virginia	334	1,337	61	159
Total 6 months	2,442	12,391	186	296
First 6 months 1929	2,495	11,937	199	312
Difference	53	454	13	16

There's a Barrett for every



At left is shown a section of the Southern Natural Gas Corporation pipe line, protected with Barrett Anti-Corrosion Products and Specifications.

For pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

Picture below illustrates revolving pipe method of applying Barrett Pipe Line Enamel.

BARRETT SPECIFICATION ANTI-CORROSION PRODUCTS

Made to meet all the many different conditions of pipe line construction. They include felt reenforced enamels for extreme conditions—rivers, swamps, etc., enamels to be applied hot in less corrosive soils; cold applications for still less corrosive locations.

Specification PIPE LINE ENAMEL

soil and climatic condition

THE Barrett Company manufactures standard enamels with varying melting points and consistencies to meet each particular soil and climatic condition as no one enamel can be supplied as a "cure-all" for all corrosive conditions.

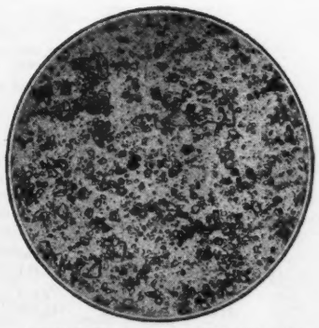
When you choose Barrett pipe line protection, our engineering and research departments cooperate with you to help solve—*before* the remedy is applied—such problems as the following:

The topographical conditions, the types of soil the pipe line is to run through, the season of the year and the weather conditions under which the pipe enamel will be applied, the various ground temperatures, the working temperature of gas, oil or water to be transmitted through the line, the depth of the ditch, the amount of over-cover, the type of construction whether welded or coupled, the moisture conditions, the conditions met in crossing swamps, rivers and gulleys, the type of water whether it is acid, alkali or salt, the hydrostatic pressure along each section—all these important problems and others are regularly handled by our engineering and research departments.

Based on the correct answers to these questions —and *76* years of experience in waterproofing and weatherproofing buildings, tunnels, dams, subways—we recommend the proper specifications of the enamels and primers to be used.

Remember, too, that Barrett Service Field Inspection is supplied. Bulletins on Barrett Anti-Corrosion Products and Specifications can be had for the asking.

This photo-micrograph shows how flakes of the internal reenforcement used by Barrett in enamels tend to interlock. They laminate with the waterproofing agent and give Barrett Pipe Line Enamel unusual tensile strength and toughness.



And here is a photo-micrograph showing how ordinary filler, the granular or dust type, looks. It is composed of tiny smoothly-surfaced particles in loose contact.

The Barrett Company
40 Rector St., New York, N. Y.

Gulf Coast Broke Production Record

Refugio, Barbers Hill and Humble Swelled Crude Output to New Peak, but All Are on Decline. Deeper Drilling

By Nell Williams
Staff Correspondent, Gulf Coast Fields

If the total production of Gulf Coast fields in 1930 is not to exceed that of 1929, which in itself broke all records for crude yield, a very material reduction in daily flow must be made during the remaining months. For the first six months of this year Gulf Coast fields produced 35,982,479 bbls. of oil, the greatest amount ever taken from the ground in this territory in any six months' period. That amount is 4,636,248 bbls. greater than the production of the last half of 1929, which was the largest producing six months' period in history of the Gulf Coast. The total output for the entire year of 1929 was 58,101,845 bbls., a record, but that is only approximately 22,000,000 bbls. more than the output for the first half of this year. Thus, if the production of the last half of this year is not to be above 22,000,000 bbls., the daily average must not exceed 120,000 bbls. As the daily flow so far this year has averaged 200,000 bbls. a reduction of 80,000 bbls. seems impossible.

That there will be some reduction in Gulf Coast production the remainder of the year is indicated in the declines which have been made by the three main producing fields, Refugio, Barbers Hill and Humble, from their peaks which were attained in March and April. Refugio, which during April ran a daily production of as high as 43,000 bbls. early in July was down to 33,000 bbls.; Barbers Hill which yielded at times as much as 30,000 bbls. during April has dropped to below 20,000 bbls., and Humble, now down to 14,000 bbls., at its high mark this year had an output of 24,000 bbls. With these three heavily producing fields apparently on the wane, there at present are no fields or area with the possible exception of Pettus which promise any important production additions within the next few months.

No Let Up in Drilling

However, there is no certainty that any of these three fields during the latter half of the year will not again attain or pass the peaks which they recently reached. There has been no let-up in drilling development at any of the three but on the other hand at Humble in recent weeks there has been a noticeable increase in the amount of new work as production is being proved up along the west, northwest and north sides of the dome.

It is probable that Refugio is through as far as any important increases are concerned. The large daily output of that field, which was built up almost entirely during the first six months of the year, was due to a hurriedly drilled 3,700-foot sand which, spreading into the town of Refugio, brought on a competitive town lot drilling orgy. Now that the 3,700-foot sand area virtually has been drilled up and there are few new completions to add to production the field is feeling the effect of overdrainage. Although the new deep sands which have been discovered covering a wide area around the field have offered possibilities for additional production, development so far has been more or less disappointing with indications that the production is extremely spotted and not of sufficient volume to be of any concern in boosting the field's output.

The immediate future of Barbers Hill hinges largely on the success of the deep drilling play which has got under way along the west and northwest and north sides of the dome. Drilling up of the deep sands skirting the east, southeast and south sides of the dome, to which has been due the greatly increased production of Barbers Hill during the first six months of this year, has about come to an end with the ending of about all line fights required. As is the case usually in salt dome production, in which flush flow is short lived and in which increases are contingent mainly on new wells brought in, a steady string of wells must be completed in the development of newer areas to result in the field showing any increases.

Humble Deep Sands Drilled Up

The first six months witnessed the playing out of the development of the deep sands on the south side of the Humble Field, a development which during 1929 and the early part of 1930 resulted in the restoration of Humble to one of the largest Gulf Coast producers. With the let up in the drilling and the consequent lack of new completions that

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GULF COAST—TEXAS

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total (bbls.)
ALLEN:							
Daily average	10	100	73	59	34	36	
Month	296	2,805	2,249	1,772	1,065	1,087	9,274
BARBERS HILL:							
Daily average	22,286	23,828	26,296	23,315	20,137	22,375	
Month	690,878	667,177	815,165	699,458	624,237	671,240	4,168,155
BATSON:							
Daily average	1,242	1,174	1,212	1,205	1,219	1,199	
Month	38,483	32,858	37,584	36,157	37,780	35,961	218,823
BIG CREEK:							
Daily average	5,436	3,861	2,956	3,263	3,880	4,287	
Month	168,513	108,122	91,625	97,915	120,288	128,599	715,062
BLUE RIDGE:							
Daily average	1,922	1,934	1,916	1,862	1,892	1,983	
Month	59,580	54,159	59,390	55,870	58,652	59,499	347,150
BRENHAM:							
Daily average	139	131	121	141	146	153	
Month	4,312	3,675	3,742	4,215	4,515	4,580	25,039
BOLING:							
Daily average	1,077	1,040	346	1,153	1,095	1,091	
Month	33,388	29,117	10,724	34,590	33,938	32,733	174,490
CLAY CREEK:							
Daily average	1,730	1,597	1,566	1,559	1,640	1,640	
Month	53,631	44,709	48,546	46,758	50,825	49,199	293,668
DAMON MOUND:							
Daily average	475	514	546	537	662	681	
Month	14,710	14,378	16,937	16,115	20,537	20,418	103,095
DE WALT:							
Daily average	12,067	12,157	10,533	10,381	11,942	11,979	
Month	374,077	340,390	326,511	311,427	370,211	359,377	2,081,993
FANNETT:							
Daily average	1,723	1,190	1,271	1,099	1,082	772	
Month	53,410	33,327	39,400	32,981	33,544	23,163	215,825
GOOSE CREEK:							
Daily average	5,060	4,931	4,473	4,814	4,430	4,668	
Month	156,863	138,069	138,682	144,440	137,354	140,050	855,458
HANKAMER:							
Daily average	436	29	56	989	1,598	2,790	
Month	13,520	819	1,730	29,675	49,550	83,702	178,996
HIGH ISLAND:							
Daily average	1,550	1,349	929	1,771	1,515	1,247	
Month	48,056	37,777	28,795	53,133	46,965	37,418	252,144
HULL:							
Daily average	9,952	8,893	8,310	8,780	9,990	9,490	
Month	308,517	248,997	257,618	263,399	309,675	284,688	1,672,894
HUMBLE:							
Daily average	12,923	15,952	14,905	17,768	16,488	14,465	
Month	400,625	446,656	462,060	533,036	511,135	433,937	2,787,449
JASPER COUNTY:							
Daily average	25	25	25	24	20	20	
Month	775	700	775	726	620	600	4,196
LOST LAKE:							
Daily average	747	758	699	638	793	464	
Month	23,154	21,210	21,666	19,130	24,583	13,917	123,660
MARKHAM:							
Daily average	340	326	267	324	320	347	
Month	10,552	9,135	8,290	9,708	9,928	10,400	58,013
MOSS BLUFF:							
Daily average	18	.....	.....	.....	.....	.....	
Month	570	.....	.....	.....	.....	.....	570
NASH:							
Daily average	510	401	306	314	302	308	
Month	15,820	11,221	9,487	9,413	9,348	9,241	64,530
NORTH DAYTON:							
Daily average	1,694	1,175	740	641	582	2,801	
Month	52,515	32,914	22,938	19,232	18,044	84,025	229,668
ORANGE:							
Daily average	2,611	2,569	2,821	2,446	2,386	2,236	
Month	80,945	71,918	87,450	73,379	73,962	66,891	454,545
ORCHARD:							
Daily average	79	74	1,506	1,887	1,835	2,814	
Month	2,436	2,079	46,696	56,601	56,875	84,409	249,096
PIERCE JUNCTION:							
Daily average	12,299	11,089	10,860	10,631	9,430	13,303	
Month	381,277	310,485	336,659	318,925	292,324	399,096	2,038,766
PORT NECHES:							
Daily average	2,470	1,784	2,000	1,845	1,677	1,443	
Month	76,563	49,945	62,000	55,335	52,009	43,298	339,150
RACCOON BEND:							
Daily average	10,544	11,936	10,277	9,928	11,884	12,004	
Month	326,878	334,194	318,592	297,848	368,415	360,128	2,006,055
REFUGIO:							
Daily average	24,228	36,274	38,453	39,487	37,265	35,214	
Month	751,063	1,015,680	1,192,052	1,184,615	1,155,213	1,056,418	6,355,041
ESPERSON (SHEEKS):							
Daily average	614	794	1,933	3,244	2,782	1,999	
Month	19,046	22,241	59,935	97,309	86,227	59,969	344,727
SARATOGA:							
Daily average	1,001	1,003	1,008	1,052	1,048	1,065	
Month	31,040	28,098	31,250	31,572	32,488	31,961	186,409
SOUR LAKE:							
Daily average	2,404	2,304	2,209	2,193	2,372	2,326	
Month	74,529	64,519	68,491	65,780	73,527	69,769	416,615
SOUTH LIBERTY:							
Daily average	6,977	5,892	4,743	4,622	4,433	4,433	
Month	216,270	164,983	147,020	138,645	137,425	132,985	937,328
SPINDLETOP:							
Daily average	18,941	17,976	16,322	13,604	16,812	17,659	
Month	587,174	503,328	505,970	408,120	521,184	529,764	3,055,540
WEST COLUMBIA:							
Daily average	6,285	6,205	5,605	6,058	5,747	5,705	
Month	194,826	173,731	173,763	181,737	178,156	171,135	1,073,348
Daily average Texas Gulf Coast	169,815	179,266	175,283	177,633	177,438	182,989	176,998
Total Texas Gulf Coast	5,264,292	5,019,416	5,433,792	5,329,015	5,500,599	5,489,657	32,036,771

(Continued on Page 243)

One New Pool in North Louisiana

First Half of 1930 Developed Little in Arkansas but Encouraging Signs of Big Gas in Mississippi

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

Interesting but far from sensational describes results of the first half year's activities in the Shreveport division embracing North Louisiana, Arkansas, the border counties of East Texas and Mississippi. One new producing district in North Louisiana, Holly, in DeSoto Parish, was uncovered and Mississippi has all the earmarks of a gas field at Jackson. Zwolle, Louisiana, uncovered in the last few weeks of 1929, got under way and the Carterville-Sarepta areas in the northeast corner of Bossier and northwest corner of Webster Parishes, in Louisiana, were revived as producing areas where they had been gas fields before.

Holly, opened in March, has, at this writing, apparently been proven and has done about all it will do unless the unexpected happens or deeper drilling should reverse the, to date, decidedly disappointing results. The border counties of Texas were barren of outstanding occurrences and South Arkansas almost passed from the picture. North Arkansas, particularly in Johnson and adjacent counties in the Arkansas River Valley, was fairly active as wildcat territory, though development of its proven and possible gas fields has not been so marked as the tremendous leasing activity of a year or so ago indicated it might be.

Monroe and Richland gas fields in Louisiana continued active under impetus of completion of two great trunk pipe lines north and east late in 1929 and during January this year. Existence of a second deeper pay of as yet undetermined potentialities in Monroe, and possibilities of a like deeper horizon in Richland resulted from tests in those areas. Development of these lower reservoirs, however, is not for this year nor, possibly, next. There is enough gas in sight now to supply all wants for some time to come, even without the Bienville and Claiborne Parish probabilities.

The Bienville gas area, 8 or 10 miles east of Elm Grove, (Bossier Parish) is more or less a return to proven but neglected gas territory, while Claiborne is a lower Trinity discovery as yet to be developed in the course of deeper drilling which this entire territory, apparently, must look to for new production in the future as the shallower horizons have been rather thoroughly explored from Red River to the Arkansas border and from the Texas line to the Mississippi during the last decade and a half.

South Arkansas may have some undiscovered production in reserve but wildcatting during the last three years has not been very encouraging, Champagnolle and the short lived Mount Holly districts being the only new production uncovered. Urbana, southeast of El Dorado territory in Union County, developed approximately 1,000 bbls. production during the last two or three months but on the whole it has been rather negative. What activity there has been here is, also, a return to neglected territory that once was a promising gas field.

Forecasts at the first of the year of considerable activity in North Louisiana as the result of the Zwolle-Blue Lake discovery and the development of a deep oil-producing horizon in the Carterville gas district were sustained by the permit records for the first half of the year of the Department of Conservation, the larger proportion of which are for North Louisiana operations. These show a total of 870 permits for all operations in the State compared to 775 for the first half of 1929. Permits for new work accounted for 549 of these compared to 429 during the same period last year but the figures do not go into detail or differentiate between wildcat and proven area activity. However, wildcatting has continued on about the same scale as last year but except for Claiborne and Bienville gas and Holly and Urbana demonstrations, has not produced hoped-for results.

Completion Records Compared

Completion records for the three major districts of the division during the first half of 1930 and 1929 show, respectively, as follows: North Louisiana, 384 and 231 completions; 32,254 bbls. and 5,414 bbls. new production; 136 and 74 dry holes; 109 and 114 gas wells. In Arkansas, 74 and 137 completions; 2,298 bbls. and 15,225 bbls. new production; 41 and 70 dry holes; 4 and 13 gas wells. In East Texas, 22 and 48 completions; 40 bbls. new production in 1929; 3 and 11 dry holes; 19 and 35 gas wells. For the entire division, exclusive of Mississippi, the totals were 480 completions in 1930 and 416 the year before; 34,873 bbls. and 20,679 bbls. new production; 181 and 155 failures; and 132 and 162 gas wells. One hundred sixty-seven producing oil wells were completed in the division during the first six months of 1930 and 99 during the first half of 1929. Total gas production so far in 1930, mainly from the Richland and Monore districts, was 2,073,863,096 feet, an increase of 174,096,656 feet over the initial open flow capacity in the same period last year. Accompanying tables in this issue give further details of completions and production.

Holly a New Discovery

The Holly district of DeSoto, approximately 8 miles north of Mansfield, was the only new production actually discovered and developed during the first half of the year, all the others, Zwolle,

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ARKANSAS

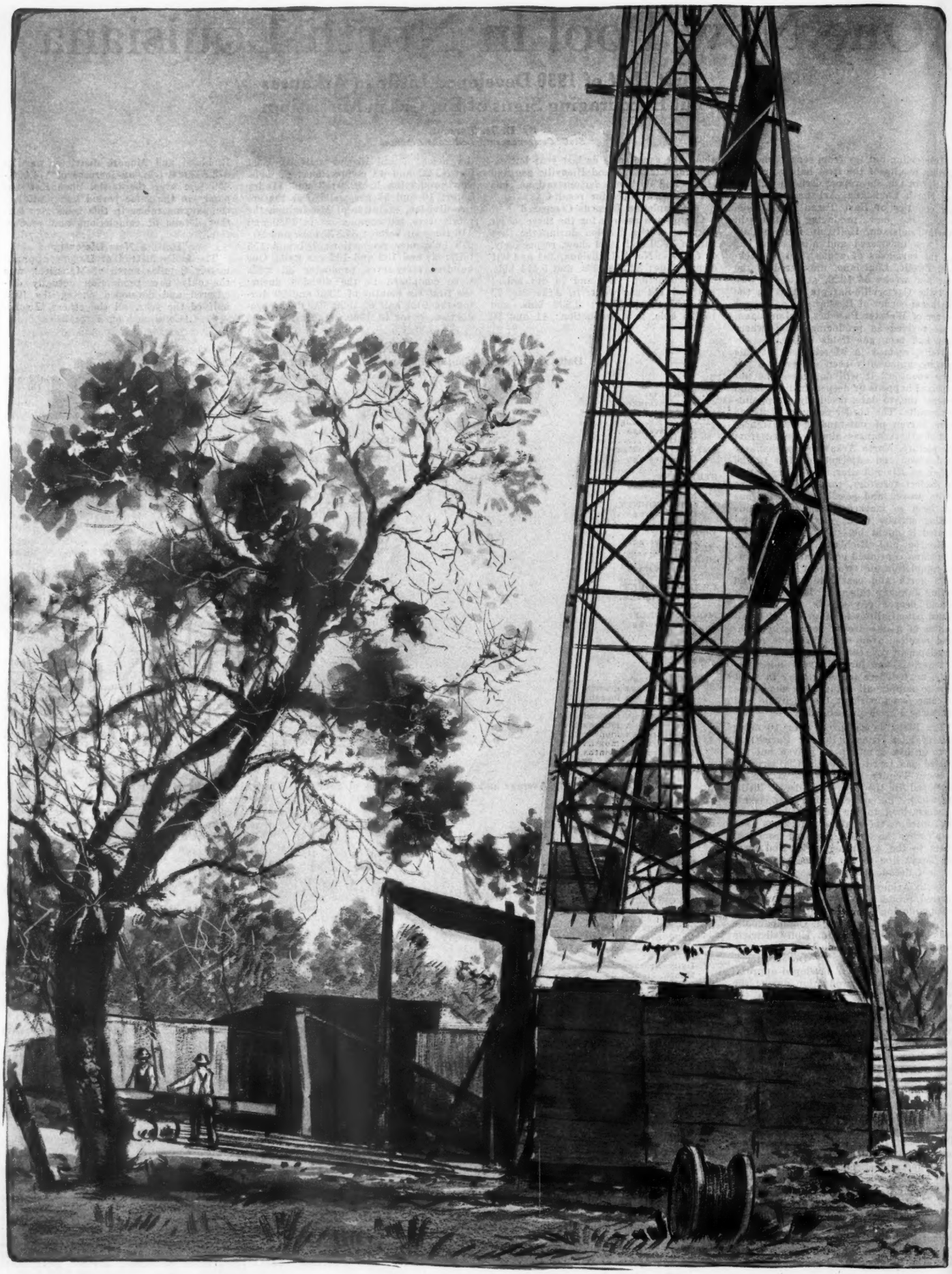
Daily Average and Monthly Production of Crude Oil First Six Months of 1930

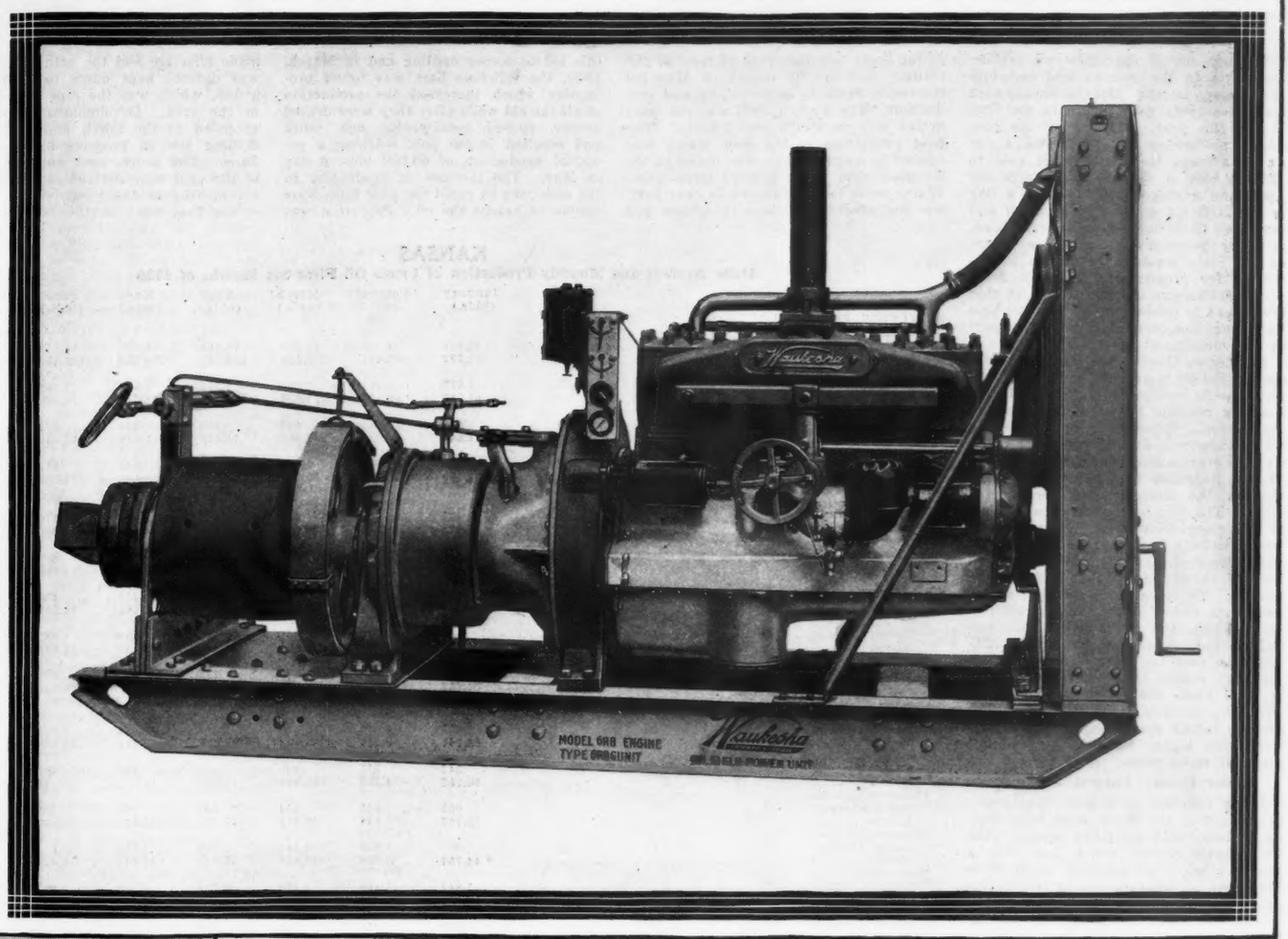
	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
EL DORADO:							
Daily average	4,272	3,080	3,995	3,977	4,055	4,075	
Month	132,432	86,240	123,845	119,310	125,705	122,250	709,782
SMACKOVER (Light):							
Daily average	5,480	5,165	5,310	5,302	5,053	5,240	
Month	169,880	144,620	164,610	159,060	156,643	157,200	952,013
SMACKOVER (Heavy):							
Daily average	40,288	41,361	41,290	40,414	36,591	39,307	
Month	1,248,928	1,158,108	1,279,990	1,212,420	1,134,321	1,179,210	7,212,977
STEPHENS:							
Daily average	1,006	991	925	960	945	947	
Month	31,186	27,748	28,675	28,800	29,295	28,410	174,114
NEVADA COUNTY:							
Daily average	1,132	1,111	1,090	878	957	931	
Month	35,092	31,108	33,790	26,340	29,667	27,930	183,927
LISBON:							
Daily average	1,067	1,032	1,035	1,025	1,006	974	
Month	33,077	28,896	32,085	30,750	31,186	29,220	185,214
BRADLEY:							
Daily average	75	84	81	80	78	64	
Month	2,325	2,352	2,511	2,400	2,418	1,920	13,926
CHAMPAGNOLLE:							
Daily average	5,206	4,470	4,770	4,705	3,914	4,232	
Month	161,386	125,160	147,870	141,150	121,334	126,960	823,860
MOUNT HOLLY:							
Daily average	109	148	145	141	115	102	
Month	3,379	4,144	4,495	4,230	3,565	3,060	22,873
URBANA:							
Daily average	.....	.....	.....	.....	831	930	
Month	.....	.....	.....	.....	25,761	27,900	53,661
Daily average	58,635	57,442	58,641	57,482	53,545	56,802	57,085
Total first six months 1930	1,817,685	1,608,376	1,817,871	1,724,460	1,659,895	1,704,060	10,332,347
Total first six months 1929	2,453,526	2,154,194	2,303,734	2,188,680	2,220,158	2,112,270	13,432,562
Total first six months 1928	2,791,922	2,571,575	2,687,948	2,472,600	2,843,847	3,075,911	16,443,803
Total first six months 1927	4,076,469	3,574,256	3,853,920	3,378,240	3,493,669	3,365,760	21,742,314
Total first six months 1926	5,489,604	4,756,836	5,115,837	5,127,510	5,482,939	5,064,760	31,037,486
Total first six months 1925	3,252,303	2,886,296	3,564,473	7,560,230	11,813,996	9,200,372	38,277,670
Total first six months 1924	3,686,680	2,302,750	3,882,695	4,068,225	4,659,117	4,756,443	24,335,910
Total first six months 1923	3,222,605	2,740,024	2,978,802	2,873,820	3,219,219	3,463,227	18,497,807

NORTH LOUISIANA

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CADDO (Light):							
Daily average	9,533	10,114	10,200	9,980	8,975	9,180	
Month	295,523	280,392	316,200	299,400	278,225	275,400	1,745,140
CADDO (Heavy):							
Daily average	2,759	3,788	2,675	2,675	2,626	2,401	
Month	85,529	106,064	82,925	80,250	81,406	72,030	508,204
HOMER:							
Daily average	3,706	3,575	3,605	3,472	3,593	3,171	
Month	114,886	100,100	111,755	104,160	111,383	95,130	637,414
HAYNESVILLE:							
Daily average	4,643	4,566	4,590	4,529	4,569	4,641	
Month	143,933	127,848	142,290	135,870	141,639	139,230	830,810
DESOTO-RED RIVER:							
Daily average	2,705	2,726	3,065	3,313	3,111	3,063	
Month	83,855	76,328	95,015	99,390	96,441	91,890	542,919
ELM GROVE:							
Daily average	505	461	450	430	407	403	
Month	15,655	12,908	13,950	12,900	12,617	12,090	80,120
BELLEVUE:							
Daily average	631	591	660	623	653	615	
Month	19,651	16,548	20,460	18,690	20,243	18,450	113,952
COTTON VALLEY:							
Daily average	2,240	2,101	2,335	2,147	2,190	2,110	
Month	69,440	58,828	73,005	64,410	67,890	63,300	396,873
URANIA:							
Daily average	5,163	5,110	5,290	5,260	5,262	2,131	
Month	160,053	143,080	163,990	157,800	163,122	153,930	941,975
PLEASANT HILL:							
Daily average	888	826	715	725	635	583	
Month	27,528	23,128	22,165	21,750	19,685	17,490	131,746
ZWOLLE:							
Daily average	3,705	4,565	4,140	4,221	3,390	3,835	
Month	114,855	127,820	128,340	126,630	105,090	115,050	717,785
HOLLY:							
Daily average	.....	.....	.....	1,135	783	1,399	
Month	.....	.....	.....	34,050	24,273	41,970	100,293
SAREPTA-CARTERSVILLE:							
Daily average	1,056	2,334	3,270	3,440	3,377	3,489	
Month	32,736	65,352	101,370	103,200	104,687	104,670	512,015
Daily average	37,534	40,657	41,015	41,950	39,571	40,021	40,106
Total first six months 1930	1,163,554	1,138,396	1,271,465	1,258,500	1,226,701	1,200,630	7,259,246
Total first six months 1929	1,114,171	990,024	1,109,986	1,069,200	1,097,121	1,068,960	6,449,462
Total first six months 1928	1,369,146	1,313,555	1,369,115	1,411,890	1,383,034	1,272,040	8,118,780
Total first six months 1927	1,589,122	1,474,004	1,589,711	1,511,250	1,469,710	1,435,020	9,068,817
Total first six months 1926	1,343,788	1,288,000	1,511,219	1,556,580	1,830,705	1,809,180	9,339,472
Total first six months 1925	1,519,434	1,346,105	1,528,037	1,566,131	1,600,306	1,520,325	9,080,338
Total first six months 1924	1,398,370	1,314,242	1,498,574	1,311,142	1,401,835	1,617,610	8,541,773
Total first six months 1923	2,272,641	1,911,560	2,204,319	2,136,590	2,125,298	1,986,283	12,636,691





SMOOTH AS VELVET... THEY PULL LIKE STEAM

BULLETIN 788 describes a new six-cylinder drilling unit. Send for it today. ***Waukesha Motor Company, Waukesha, Wis. In the Oil Fields: C. F. Camp Co., Tulsa; Portable Rig Co., Houston; Bradford Supply Co., Bradford, Pa.; Waukesha Industrial Engine Sales & Service Co., San Francisco and Los Angeles.***

WAUKESHA ENGINES

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Rich New Pools in Kansas Curtailed

State Could Have Broken All Production Records but Important Pools Were Curtailed. Busy Half Year

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas, one of the oldest oil producing states in the country and certainly the oldest in the Mid-Continent area made a notably good record in the first half of this year. Starting off the year with a production of 105,587 bbls. a day as an average for January, it rose to 128,335 bbls. a day as an average for April and averaged 117,243 bbls. a day in the first six months. The flush and semiflush fields were kept under curtailment by voluntary action of producers or the State would have broken all its records for production. Pools in Sedgwick, McPherson and Rice Counties that threatened to produce more than the pipe line companies cared to handle took part in the curtailment movement.

McPherson County was the most active spot in the State and out of the 514 completed wells credited to the State in the first six months, 119 were completed in McPherson. Greenwood, an old field in which there was a great revival of activity this year, completed 88 wells, Cowley 41 and Sedgwick 40. Forty-eight counties in the State recorded completed wells. The dry hole average was high, as 217 completions were dusters or salt water wells. Forty-one new gas wells were reported, 14 of which were in Stevens County and 11 in Chautauqua County. The number of completions exceeded the record of the same period last year by 25, and the 100,380 bbls. initial production was an increase of 22,523 bbls. over last year's first half and the best record since the same period in 1925 when 864 wells produced 107,407 bbls. in their first 24 hours. The average initial production of this year's wells was higher than in any similar period in many years.

Butler County Largest Producer

Using counties as a unit, the largest production in the State came from Butler County, with its many pools. That old reliable county which has been a producer on a considerable scale since 1914, and at one time one of the largest producing counties in the United States, is credited with 4,558,023 bbls. in the first six months of this year, a daily average of 25,127 bbls. Sedgwick County, which was held under curtailment all year was permitted to produce 3,856,737 bbls., a daily average of 21,308 bbls. Greenwood County, which, like Butler, produced without restraint, made a record of 3,725,450 bbls. or 20,583 bbls. per day. McPherson, a curtailed area was permitted to produce 2,730,513 bbls., an average of 15,086 bbls.

The important feature in Kansas in the first six months was the development work in the central counties in the State and the intensive drilling campaign in the extreme southwestern part of the State.

Central and Southwest Fields

It was known at the beginning of the year that the central and western part of Kansas was due for an extensive drilling campaign, a large part of which was expected to be wildcat tests. The oil companies were unable to induce the landowners to grant them renewals with no drilling obligations. A considerable number of five-year leases in the various counties in the middle and western areas of the State were about to expire. The leases in McPherson County in particular were affected. A large majority of the leases were in areas where the renewal prices were high and immediate tests were required. The same situation applied to the checkerboard leases in the area west of Sedgwick and Harvey Counties. The counties affected by the expiring leases were Reno, Rice, Kingman, Stafford and Pratt.

McPherson County in the central part of the State was the scene of most of the drilling and by the month of May led the entire State in both drilling and production. The Voshell Pool was the most active area in McPherson County. The first production in the pool, which was opened in August, 1928, was found in the Simpson sand which yielded large wells. Water made its appearance in that horizon and production began to decline and this led to deeper drilling and in March, 1930, the Silicious lime was found productive which increased the production of all the old wells after they were drilled deeper, caused considerable new work and resulted in the pool reaching a potential production of 60,000 bbls. a day in May. The increase in production in the area was so rapid the pipe lines were unable to handle the oil. Proration was made effective and the actual production was ordered kept down to 21,000 bbls. a day, which was the pipe line capacity in the area. Development in the pool extended to the north and considerable drilling was in progress by the end of June. The south, east and west limits of the pool were defined during the first six months of the year.

The first week in the year found the

KANSAS

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
SEDGWICK COUNTY:							
Wright—							
Daily average	18,432	18,124	17,208	16,985	16,435	15,014	
Month	571,392	507,472	533,448	509,550	509,485	450,420	3,081,767
Greenwich—							
Daily average	3,019	3,102	3,020	3,162	2,659	2,632	
Month	93,589	86,856	93,620	94,860	82,429	78,960	530,314
Robbins—							
Daily average	440	432	403	389	368	373	
Month	13,640	12,096	12,493	11,670	11,408	11,190	72,497
Miscellaneous—							
Daily average	1,019	1,022	1,039	873	845	912	
Month	31,589	28,616	32,209	26,190	26,195	27,360	172,159
MARION COUNTY:							
Florence-Urschel—							
Daily average	409	478	472	489	474	476	
Month	12,679	13,384	14,632	14,670	14,694	14,280	84,339
Peabody—							
Daily average	1,250	1,194	1,091	882	794	801	
Month	38,750	33,432	33,821	26,460	24,614	24,030	181,107
Covert-Sellers—							
Daily average	427	401	447	440	415	411	
Month	13,237	11,228	13,857	13,200	12,865	12,330	76,717
Lost Springs—							
Daily average	545	695	666	613	599	589	
Month	16,895	19,460	20,646	18,390	18,569	17,670	111,630
Davis—							
Daily average	802	910	823	782	813	801	
Month	24,862	25,480	25,513	23,460	25,203	24,030	148,548
BUTLER COUNTY:							
Elbing—							
Daily average	2,057	2,073	2,013	2,013	2,010	2,003	
Month	63,767	58,044	62,403	60,390	62,310	60,090	367,004
Potwin—							
Daily average	347	511	499	481	452	461	
Month	10,757	14,308	15,469	14,430	14,012	13,830	82,806
Cameron-Robinson—							
Daily average	605	605	594	569	725	703	
Month	18,765	16,940	18,414	17,070	22,475	21,090	114,744
Wilson-Dunkle—							
Daily average	1,444	1,628	1,550	1,597	1,531	1,534	
Month	44,764	45,584	48,050	47,910	47,461	46,020	279,789
Towanda—							
Daily average	1,842	1,858	1,771	1,715	1,731	1,697	
Month	57,102	52,024	54,901	51,450	53,661	50,910	320,748
Fox-Bush—							
Daily average	953	949	938	934	916	894	
Month	29,543	26,572	29,078	28,020	28,396	26,820	168,429
Nuttle-Koogler—							
Daily average	2,895	2,508	3,025	2,985	3,055	2,989	
Month	89,745	70,224	93,775	89,550	94,705	89,670	527,669
Eldorado—							
Daily average	6,131	6,415	6,804	6,729	6,830	6,782	
Month	190,061	179,620	210,924	201,870	211,730	203,460	1,197,665
Smock—							
Daily average	197	196	210	212	201	194	
Month	6,107	5,488	6,510	6,360	6,231	5,820	36,516
Leon-Weaver—							
Daily average	4,863	4,718	4,702	4,265	3,982	3,881	
Month	150,753	132,104	145,762	127,950	123,442	116,430	796,441
North Augusta—							
Daily average	767	846	858	868	836	829	
Month	23,777	23,688	26,598	26,040	25,916	24,870	150,889
South Augusta—							
Daily average	1,054	1,102	1,182	1,187	1,174	1,166	
Month	32,674	30,856	36,642	35,610	36,394	34,980	207,156
Sluss—							
Daily average	207	230	225	224	525	417	
Month	6,417	6,440	6,975	6,720	16,275	12,510	55,337
Douglass—							
Daily average	108	108	105	97	96	91	
Month	3,348	3,024	3,255	2,910	2,976	2,730	18,243
Keighly—							
Daily average	493	490	303	476	461	452	
Month	15,283	13,720	9,393	14,280	14,291	13,560	80,527
Benton—							
Daily average	59	51	51	49	42	42	
Month	1,829	1,428	1,581	1,470	1,302	1,260	8,870
Blankenship—							
Daily average	704	746	852	864	826	818	
Month	21,824	20,888	26,412	25,920	25,606	24,540	145,190
GREENWOOD AND WOODSON COUNTIES:							
Sallyards—							
Daily average	942	1,045	1,097	1,025	1,016	1,002	
Month	29,202	29,260	34,007	30,750	31,496	30,060	184,775
Teeter-Pixley-Scott-							
Daily average	4,606	3,844	3,952	4,125	4,075	3,990	
Month	142,786	107,632	122,512	123,750	126,325	119,700	742,705
Virgil—							
Daily average	5,228	5,422	5,482	5,619	5,666	5,611	
Month	162,068	151,816	169,942	168,570	175,646	168,330	996,372
Thrall-Burkett—							
Daily average	1,136	1,231	1,182	1,111	1,131	1,108	
Month	35,216	34,468	36,642	33,330	35,061	33,240	207,957
Seeley—							
Daily average	7,417	6,760	7,709	7,306	7,370	7,269	
Month	229,927	189,280	238,979	219,180	228,470	218,070	1,323,906

(Table Continued on Next Page)

new development increasing in the Voshell Pool. The pool was holding the attention of the industry in Kansas. It was yielding the largest wells in the State and the productive area was spreading in all directions from the discovery well. Eighteen new locations were announced that week. Operators disregarded the fact that the producing wells in the area were under a proration plan and were restricted to 50 bbls. a day, after producing wide open for 72 hours. The proration plan was agreed to by all operators and was effective to February 15. The first week in the year the pool had a potential production of 6,000 bbls. a day. Bad weather conditions soon developed and delayed operations in the pool and in other parts of the State.

With the coming of better weather several companies owning acreage in the area moved in rigs and started drilling to the Wilcox sand. Operators attempted to curtail development and production and it was agreed to limit the production to the pipe line capacity which was 15,000 bbls. a day. Production from the Wilcox sand declined rapidly and the production from the pool did not exceed the pipe line capacity. In the latter part of March the Derby Oil Co. decided to deepen its No. 8 Stucky, SE cor. NE SE, Section 9-21-3w, and they found the Silicious lime at 3,402 feet and after drilling to 3,415 feet the production was increased and the well swabbed approximately 2,000 bbls. in 24 hours. Following this discovery practically every other well in the pool producing from the Wilcox sand was deepened to the Silicious lime, and in each instance production was increased.

The pool soon developed into a major producing area and extended about 2½ miles north and south and about three-quarters of a mile east and west. The area soon had about 70 wells with a potential production of 60,000 bbls. a day, on the swab. It was agreed, however, that potential gauges would be taken on the pump and that method reduced the potential to approximately 35,000 bbls. a day. Actual production was limited to approximately 21,000 bbls. a day, which was the capacity of the pipe lines serving the pool.

After the Silicious lime was found to yield large wells operators discovered in April. The water encroachment was that water was coming into these wells more noticeable in the south end of the pool, and leases in that part of the area were finding the largest percentage of water.

The Derby Oil Co. installed a submarine pump, the first one used in the Voshell Pool, at its No. 1 Voshell, NE cor. SE, Section 9-21-3w. The potential gauge was taken with the use of this pump. It increased its production but was only used for a short time. It demonstrated its ability to handle a large amount of fluid.

The pool was extended again in March to the northeast by the Gypsy Oil Co.'s No. 1 Krehbiel, SW cor., Section 3-21-3w, a 600-bbl. well from the Wilcox sand at 3,357-59 feet.

The largest well completed in the Voshell Pool was the Derby Oil Co.'s No. 3 Stuckey, NE cor. NW SE, Section 9-21-3, which made 2,656 bbls. of oil the first 24 hours. The same company had six wells on the lease with a potential of 10,500 bbls. a day.

During the month of June Voshell had an estimated production of 40,000 bbls. a day. The pipe line companies were only taking about 21,000 bbls. a day from the area. The pool was being prorated almost 50 per cent.

The Voshell Pool was extended to the north the last week in March by the E. W. Marland, Inc.'s No. 1 Moorehouse, SW cor. NW, Section 3-21-3w. It swabbed 390 bbls. the first 12 hours from the Simpson sand at 3,408-19 feet.

Ritz Pool Has Largest Well

The Shell Petroleum Corp.'s No. 1 Miller, SW cor. SE, Section 1-20-2w, Ritz Pool, McPherson County, was the largest well completed in the State this year. It made 600 bbls. an hour and 2,600 bbls. in four hours, under a 200-pound back pressure. It was estimated to be a 12,000-bbl. well if allowed to flow wide open.

Wildcatting in McPherson

Several wildcat tests in McPherson County found oil and others were failures. The McPherson Oil & Gas Co.'s No. 1 Sorenson, C SE, Section 23-18-2w, was abandoned at a total depth of 3,602 feet. Same company's No. 1 Fish, SW cor. NE NE, Section 15-21-2w, was a hole full of water and was abandoned in the Silicious lime at 3,692 feet. It was located 7 miles east of the Voshell Pool.

On the southwest edge of the McPherson gas pool, Mid-Kansas Oil & Gas Co.'s No. 2 Larson, NW cor. NE SW, Sec-

(Continued on Page 254)

KANSAS (Continued)

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
Polhamus—							
Daily average	677	715	728	714	703	697	
Month	20,987	20,020	22,568	21,420	21,793	20,910	127,698
Miscellaneous—							
Daily average	741	799	795	804	769	803	
Month	22,971	22,372	24,645	24,120	23,839	24,090	142,037
COWLEY COUNTY:							
Rainbow Bend—							
Daily average	1,239	1,227	1,530	1,596	1,788	1,691	
Month	38,409	34,356	47,430	47,880	55,428	50,730	274,233
Slick—							
Daily average	498	486	473	478	473	469	
Month	15,438	13,608	14,663	14,340	14,663	14,070	86,782
Graham—							
Daily average	211	215	235	261	296	274	
Month	6,541	6,020	7,285	7,830	9,176	8,220	45,072
Rock—							
Daily average	140	131	137	134	151	149	
Month	4,340	3,668	4,247	4,020	4,681	4,470	25,426
Clark—							
Daily average	113	113	114	105	101	104	
Month	3,473	3,164	3,534	3,150	3,131	3,120	19,571
Eastman—							
Daily average	358	347	310	292	306	299	
Month	11,098	9,716	9,610	8,760	9,486	8,970	57,640
Winfield-New Salem—							
Daily average	1,893	1,983	1,843	1,939	1,898	1,903	
Month	58,683	55,524	57,133	58,170	58,838	57,090	345,438
Miscellaneous—							
Daily average	810	827	812	884	911	930	
Month	25,110	23,156	25,172	26,520	28,241	27,900	156,099
McPHERSON COUNTY:							
Ritz—							
Daily average	.....	.....	.....	781	5,128	4,921	
Month	.....	.....	.....	23,430	158,968	147,630	330,028
Voshell—							
Daily average	.....	.....	.....	17,884	21,636	21,305	
Month	.....	.....	.....	536,520	670,716	639,150	1,846,386
Miscellaneous—							
Daily average	2,889	4,950	10,070	151	150	153	
Month	89,559	138,600	312,170	4,520	4,650	4,590	554,099
OTHER COUNTIES:							
Rooks—							
Daily average	84	74	59	56	56	55	
Month	2,604	2,072	1,829	1,680	1,736	1,650	11,571
Sumner—							
Daily average	8,315	8,227	8,115	9,407	9,048	8,868	
Month	257,765	230,356	251,565	282,210	280,488	266,040	1,568,424
Rice—							
Daily average	607	1,270	1,431	767	766	782	
Month	18,817	35,560	44,361	23,010	23,746	23,460	168,954
Russell—							
Daily average	3,870	3,768	3,729	3,879	3,909	3,878	
Month	119,970	105,504	115,599	116,370	121,179	116,340	694,962
Reno—							
Daily average	25	21	24	24	24	23	
Month	775	588	744	720	744	690	4,261
Harvey—							
Daily average	6	12	10	10	12	11	
Month	186	336	310	304	372	330	1,838
Trego—							
Daily average	20	12	20	20	17	16	
Month	620	336	620	599	527	480	3,182
Coffey—							
Daily average	285	286	279	274	283	279	
Month	8,835	8,008	8,649	8,220	8,773	8,370	50,855
Chautauqua—							
Daily average	2,998	2,032	3,402	3,402	2,795	2,946	
Month	92,938	56,896	105,462	102,060	86,645	88,380	532,381
Elk—							
Daily average	1,793	1,845	1,767	1,750	1,799	1,804	
Month	55,583	51,660	54,777	52,500	55,769	54,120	324,409
Wilson—							
Daily average	157	155	157	149	154	151	
Month	4,867	4,340	4,867	4,470	4,774	4,530	27,848
Montgomery—							
Daily average	1,315	1,136	1,202	3,528	1,140	1,162	
Month	40,765	31,808	37,262	105,840	35,340	34,860	285,875
Allen—							
Daily average	457	400	397	485	485	476	
Month	14,167	11,200	12,307	14,550	15,035	14,280	81,539
Neosho—							
Daily average	513	497	488	485	500	488	
Month	15,903	13,916	15,128	14,550	15,500	14,640	89,637
Lyon—							
Daily average	903	792	756	736	699	689	
Month	27,993	22,176	23,436	22,080	21,669	20,670	138,024
Miami—							
Daily average	965	763	761	1,118	1,206	1,191	
Month	29,915	21,364	23,591	33,540	37,386	35,730	181,526
Franklin—							
Daily average	304	255	256	314	329	326	
Month	9,424	7,140	7,936	9,420	10,199	9,780	53,899
Douglas—							
Daily average	12	12	12	12	12	11	
Month	372	336	372	360	372	330	2,142
Bourbon—							
Daily average	103	48	47	80	83	81	
Month	3,193	1,344	1,457	2,400	2,542	2,430	13,366
Linn—							
Daily average	121	122	121	149	172	166	
Month	3,751	3,416	3,751	4,470	5,332	4,980	25,700
Anderson—							
Daily average	1,632	1,747	1,750	1,586	1,586	1,567	
Month	50,592	48,916	54,250	47,580	49,166	47,010	297,514
Labette—							
Daily average	27	27	26	27	27	26	
Month	837	756	806	810	837	780	4,826
Chase—							
Daily average	12	13	13	21	20	19	
Month	372	364	403	630	620	570	2,959
Woodson—							
Daily average	1,097	917	903	1,097	851	847	
Month	34,007	25,676	27,993	32,910	26,381	25,410	172,377
Daily average	105,587	105,918	113,045	124,475	128,335	125,502	117,243
Total first six months 1930	3,273,197	2,965,704	3,504,395	3,734,253	3,978,385	3,765,060	21,220,994
Total first six months 1929	2,861,641	2,557,968	2,951,076	3,112,740	3,665,099	3,636,150	18,784,674
Total first six months 1928	3,319,325	3,079,887	3,379,031	3,412,360	3,367,809	3,202,059	19,760,462
Total first six months 1927	3,769,879	3,352,076	3,675,143	3,516,930	3,704,314	3,437,580	21,455,923
Total first six months 1926	3,250,536	2,877,812	3,334,887	3,330,120	3,516,640	3,366,450	19,676,445
Total first six months 1925	2,520,858	2,466,660	2,824,534	2,971,110	3,493,266	3,175,440	17,451,868
Total first six months 1924	2,223,878	2,112,853	2,206,426	2,268,540	2,459,765	2,469,380	13,740,843
Total first six months 1923	2,638,975	2,360,288	2,588,531	2,624,430	2,852,217	2,797,830	15,862,271

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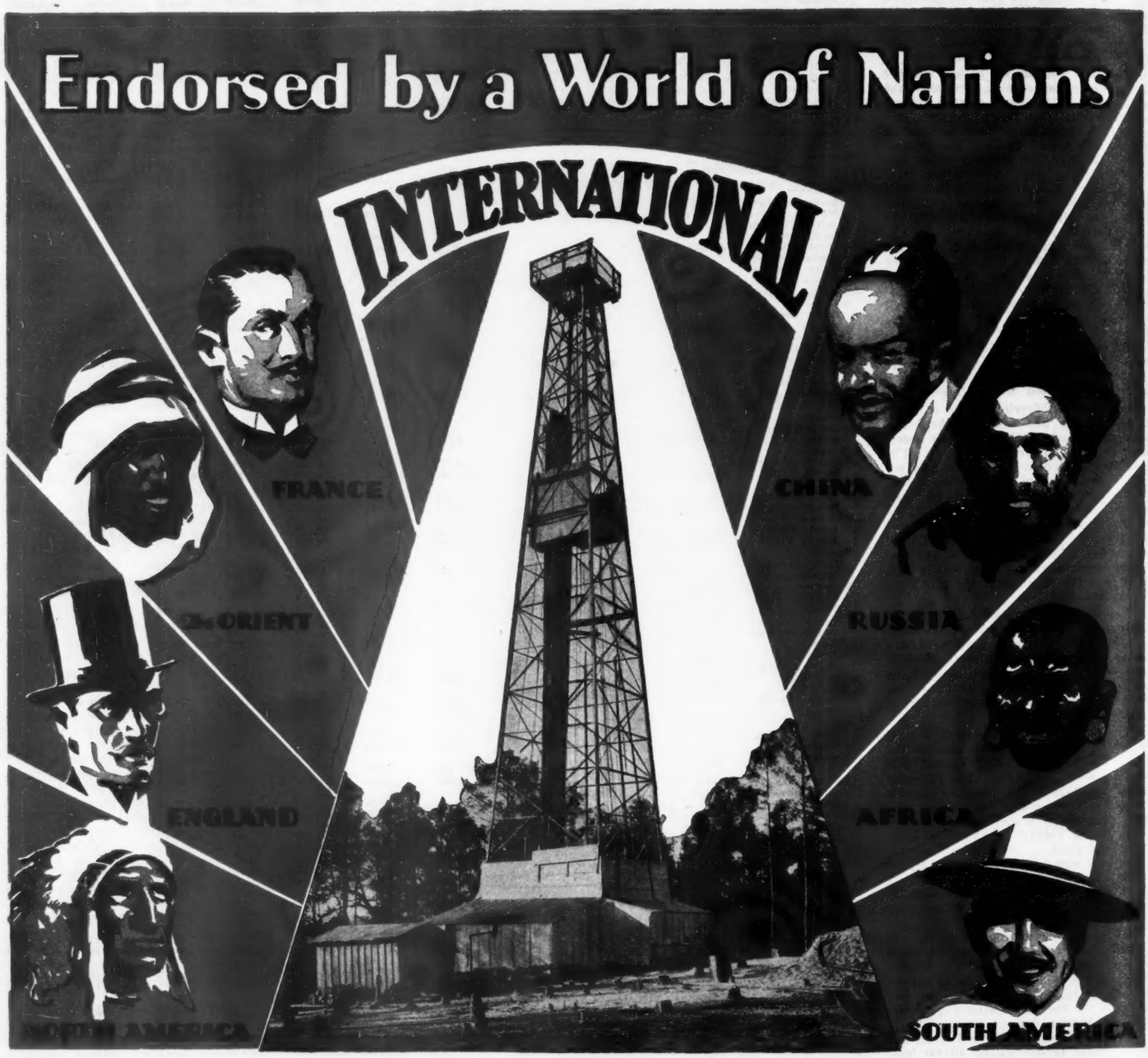

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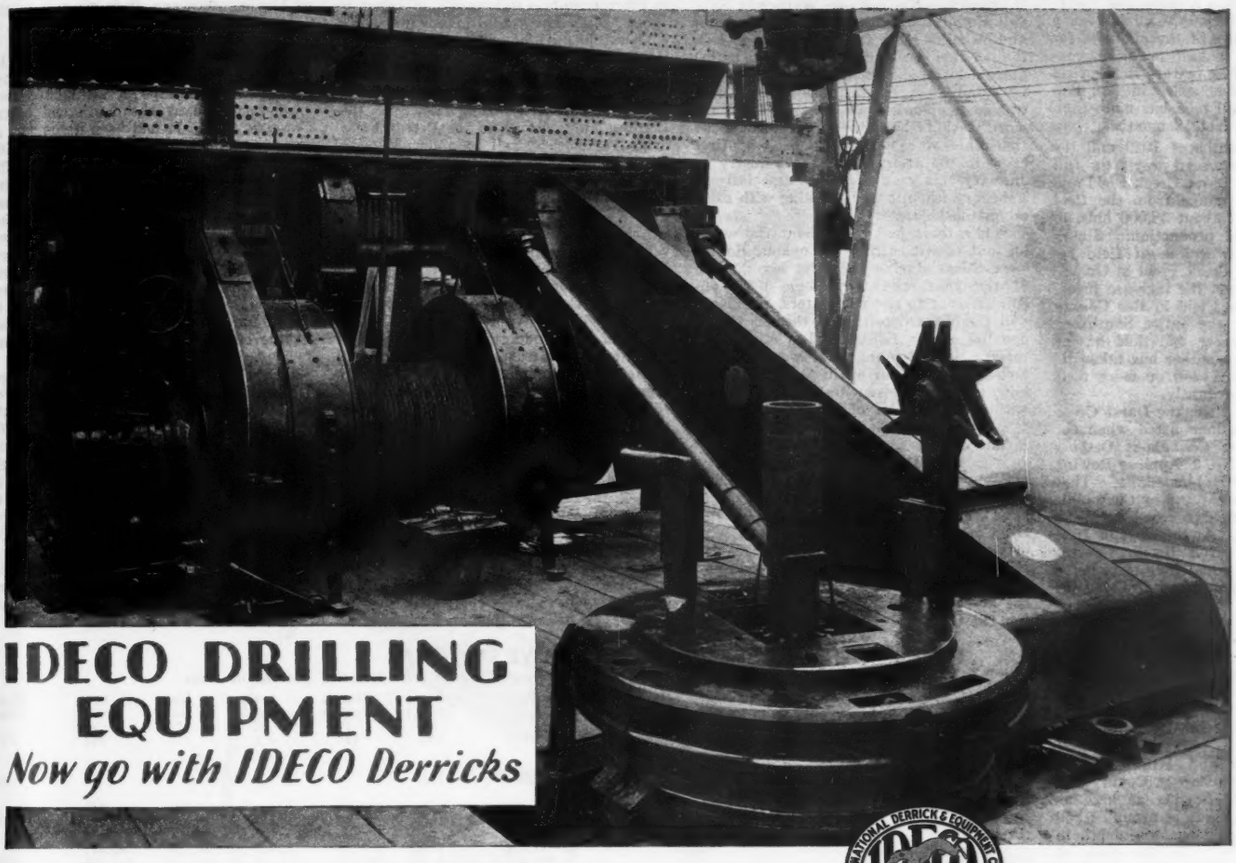

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Southwest Texas Increased Output

Compared With First Half of Last Year Widely Scattered Field Has Made Important Progress. Future Encouraging

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

The number of new operators who have been pouring into San Antonio and Southwest Texas and which influx has been a characteristic feature of the oil news for the last year and a half or more, continued to be a leading feature in the first half of 1930. Office space in San Antonio occupied by oil men has more than doubled within the last 12 months.

The last two months of 1929 and the first six of 1930 have seen nearly the full development of the Darst Creek Field and the last proration gauge from the field showed a decline of about 38,000 bbls. in the daily potential production. Simultaneously with the decline of field activity of the Darst Creek Field in Guadalupe County has been the increase in activity of the Pettus Field in Bee County and generally over the entire Southwest Texas territory, where one field having declined in activity another has taken its place so that around 250 or more tests have been listed constantly.

Late in October, 1929, the Darst Creek Field had two locations listed when the Magnolia Petroleum Co., about October 20, brought in its No. 1 Appling flowing at the rate of 6,400 bbls. daily. That started the development and by the middle of February the field reached its peak with 55 tests listed. At the close of June there were only seven listed. Pettus Field in Bee County had four tests listed the first of January and had 43 listed the last of June.

Other activity over the Southwest Texas territory has about balanced itself with an increase in northeastern Zapata County where the Escobas Pool has lately started a string of new wells and where National Oil Co.'s No. 1 Adams, west of the Jennings Field, is threatening to bring in a new pool.

In the Escobas and Killam-Cuellar Pools in northeastern Zapata County late in June some wells flowing as high as 100 bbls. an hour came in at around 1,250 feet, the biggest considering the depth in the Laredo territory. At the close of June there were 35 operations listed in that territory which was half of all listed in the Laredo territory. Activity in that area has all sprung up during the first half of 1930 and in fact during the last three months. Although the discovery well was brought in June 14, 1929, development lagged, due to the second and subsequent wells being small or dry, until several weeks ago when better wells were brought in and development started.

Medina County

Late in June there was another flare-up in Medina County. Sunflower Oil Co. got a small well in Survey 532 on Mofield land, 3 miles west of the Ina oil field and at about the same depth. Along with the increased number of operators in Southwest Texas and increased activity generally, operators have leased the southern half of Medina County all over again. Considerable of it was already under lease but when the Darst Creek Field opened up it started things anew all along the Balcones fault. Also with the development of gas commercially in Maverick County on the Chittim ranch with a gas pipe line from the field practically completed as this was being written, attention of operators has been naturally pulled to the west, hoping that production would be picked up in that part of the Balcones zone to match the production in the pools around Luling. The Edwards lime fields around Luling up to this time have produced 74 per cent of all the crude produced in Southwest Texas.

Kendall Discovery

The first half of 1930 in Southwest Texas is unusual in that it is the first six months in several such periods that no new oil or gas pools were opened. However, the day is partly saved by P. B. Sterling's No. 1 Willie Werner in Kendall County, which at 914 feet in depth and 50 miles from any production and on the north side of the Balcones fault bailed quite a lot of oil out of the hole and can be rated as a commercial well. There was some open hole to be cased and some more work to be done on the test at the time this was written. The test first came to the attention of the industry in January this year and more especially in February when it was standing with some oil in the hole.

While there has been about the usual amount of wildcatting throughout Southwest Texas during the first six months of the year, and with some little encouragement to the wildcatters, this Kendall County proposition is the nearest to opening a new field. It has stirred up interest in the county. It was the first test ever drilled for oil in the county and now there are seven tests being drilled within a few miles of the Sterling's No. 1 Werner, which is 6 miles due east of Sisterdale.

1929 Discoveries Delayed

Some of the most promising of the discoveries during the latter part of 1929 have been delayed in developing. Houston Oil Co.'s discovery in the northern part of Brooks County on the Lasater ranch is still a field of one well. The company has had trouble with its second test and the acreage is largely held by the Houston Oil Co.

The Texas Company discovered a pool in Starr County 4 miles north of Roma in 1929. It is still a pool of one well. The company has drilled one other dry hole on the lease and since it owns all the acreage it is in no hurry to develop.

C. F. Nichols, who discovered gas at 1,910 feet in his No. 2 Hicks in Bee County 7 miles south of the Pettus Field, drilled one other well to a deeper sand, 3,619-28 feet, which made 20,000,000 feet of gas. Another test to this deeper sand is now being drilled.

Cole Pool Area

Features worth mentioning in the development work of the first six months of 1930 are the discovery of oil at around gas production depths by the Magnolia Petroleum Co. in the southwest corner of Survey 662 in Webb County, 4 miles north of oil production of the Cole oil pool and 1 mile east. It was the No. 2 C. Benavides, completed at 2,335 feet during the last days of December, 1929, for 150 bbls. of oil. There is gas production at about the same depth and from the same sand a mile northeast of it and strung along over the 4 miles between it and the oil production of the Cole oil pool.

Nothing happened much around the well till W. G. French drilled his No. 1 Rosa de Benavides in the northwest corner of Survey 659, two locations south of it, and got a 100-bbl. well, and since then two others have been completed, one by French and a west offset to French's test by the Magnolia. With the exception of French's acreage, it is all held by the Magnolia. The oil is heavy.

New Sand Discovered

Magnolia Petroleum Co. deepened its No. 1 Brennan Benavides in Duval County at the north edge of the O'Hern-Seacord Pool and at the south end of the Cole gas field. It had been a gas well at 1,750 feet and when deepened to 2,765 feet it flowed 95 bbls. in 12 hours. The gravity of the oil is 30.8° A.P.I. O'Hern & Seacord two or three years before had got gas and some oil at about the same depth a half mile south of it. Otherwise, this was the first discovery of production in that sand. Wilkins Seacord owned the well to the south and about 1,000 acres and in April he sold this to the Magnolia Petroleum Co., which has not developed the sand any further thus far.

About the middle of April the Robert Driscoll estate brought in its No. 11 Fee in Duval County, several miles northeast of the Cole gas field, flowing 700 bbls. of oil of 22 gravity on three-fourths inch choke at 2,890 feet, total depth. Robert Driscoll owned a big ranch in that part of Duval County amounting to some 60,000 acres and he drilled three other oil wells to about the depth of the No. 11, but they were not as good wells. Early in the year Driscoll died. The estate since deepened the No. 11 which had been a gas well at around 2,400 feet.

(Continued on Page 258)

SOUTHWEST TEXAS

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total (bbls.)
BRANYON:							
Daily average	21	21	20	21	24	32	
Month	666	595	637	623	747	966	4,234
BROOKS:							
Daily average	.....	9	.....	.....	.....	.....	
Month	.....	238	.....	.....	.....	.....	238
BUCHANAN:							
Daily average	18	40	94	414	255	268	
Month	560	1,127	2,913	12,423	7,905	8,051	32,979
BRUNER:							
Daily average	27,214	25,529	23,773	20,464	20,134	23,487	
Month	843,657	714,810	736,953	613,919	624,163	704,603	4,238,105
DALE:							
Daily average	432	381	368	348	348	337	
Month	13,392	10,682	11,408	10,438	10,793	10,111	66,824
DARST CREEK:							
Daily average	13,591	16,037	16,333	18,183	22,422	24,298	
Month	421,314	449,029	506,328	545,470	695,067	728,931	3,346,139
KINGSVILLE:							
Daily average	187	160	127	128	113	114	
Month	5,801	4,466	3,926	3,836	3,490	3,416	24,935
LARREMORE:							
Daily average	112	91	102	54	31	35	
Month	3,474	2,541	3,152	1,622	974	1,059	12,822
LULING:							
Daily average	9,207	9,543	9,727	9,569	9,804	9,673	
Month	285,411	267,211	301,547	287,065	303,918	290,179	1,735,331
LYTTON SPRINGS:							
Daily average	824	872	855	821	862	838	
Month	25,553	24,409	26,519	24,631	26,734	25,133	152,979
MANFORD:							
Daily average	280	577	627	847	506	431	
Month	8,666	16,170	19,435	25,405	15,675	12,930	98,281
McMULLEN COUNTY:							
Daily average	42	38	36	38	35	34	
Month	1,314	1,057	1,120	1,190	1,085	1,022	6,788
MEDINA COUNTY:							
Daily average	24	22	22	24	21	23	
Month	744	616	682	709	682	654	4,087
MIRANDO:							
Daily average	9,357	8,946	8,425	8,747	10,440	11,024	
Month	290,059	250,489	261,167	262,406	323,634	330,716	1,718,471
PETTUS:							
Daily average	.....	54	667	1,164	3,022	4,542	
Month	.....	1,498	20,664	34,930	93,679	136,259	287,030
SOMERSET:							
Daily average	1,733	1,670	1,590	1,535	1,575	1,582	
Month	53,732	46,774	49,295	46,038	48,812	47,465	292,116
STARR:							
Daily average	.....	25	16	.....	.....	.....	
Month	.....	693	494	.....	.....	.....	1,187
CHAPMAN:							
Daily average	.....	.....	.....	.....	.....	3,511	
Month	.....	.....	.....	.....	.....	105,326	105,326
TAYLOR:							
Daily average	.....	.....	253	183	488	.....	
Month	.....	.....	7,858	5,500	15,132	.....	28,490
YOAST:							
Daily average	866	767	758	571	513	484	
Month	26,831	21,490	23,486	17,125	15,915	14,520	119,367
Daily average	63,908	64,782	63,793	63,111	70,503	80,712	67,892
Total first six months 1930	1,981,174	1,813,895	1,977,584	1,893,330	2,188,405	2,421,341	12,275,729
Total first six months 1929	1,453,427	1,527,677	2,021,412	2,199,207	2,413,599	2,424,277	12,039,599
Total first six months 1928	825,036	789,190	839,945	807,553	804,627	774,570	4,840,921
Total first six months 1927	1,245,672	1,075,312	1,167,584	1,112,760	1,092,233	1,026,180	6,718,732
Total first six months 1926	1,233,397	1,100,720	1,220,842	1,176,630	1,208,163	1,062,020	7,101,772

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North Texas and Panhandle Very Busy

New Pools in Several Counties in First Half of Year. Big Hunt Is On for Gas in Panhandle Counties

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

The past six months have brought to light in the Texas Panhandle several new pools, several pool extensions by the completion of semiwildcat tests, many dry holes, both shallow and deep. It also brought on the trials and tribulations of voluntary proration agreements in some of the flush production pools, such as in Gray County where production was running over 100,000 bbls. per day crowding the purchasers and pipe lines serving that county's pools, and filling storage until there was no more room for oil.

Additional units were constructed on some of the pipe lines out of that area to handle more oil, several refineries have been erected, and other lines constructed to these refineries and to railroad loading racks to help take care of the vast amount of production which had been piling up each week by the addition of large flush producers.

January saw the first proration go into effect in Gray County, and an umpire was appointed to gauge the wells and oversee production in the flush areas of the county. E. G. Daly was appointed umpire.

Wilbarger County in the Wichita Falls district also went under proration, this proration effected by the pipe line companies serving the district. They cut their pipe line runs 50 per cent running the other 50 per cent to storage, at the expense of the operator. A 6-inch line of the Waggoner estate was laid from the famous Waggoner pasture in Wilbarger and Wichita Counties to Wichita Falls to relieve overcrowded pipe line conditions in that area, and other short lines were constructed to handle more oil from the "pasture," one of the largest producing areas of the district.

New Riggs-Larimore Pool

Young County saw its first proration in the middle of July when the new Riggs or Larimore Pool, 2 miles north of the town of New Castle was prorated to 1,345 bbls. from a potential of around 15,000 to 17,000 bbls. per day. The Prairie Pipe Line Co. was the only company serving this pool, and due to a general curtailment of its purchases in the Mid-Continent was forced to cut runs in this area, consequently elected to take only a small amount from the Riggs Pool, which was discovered by Terrell and Remington on the Larimore farm in April.

Notable Discovery

One of the most interesting wildcat discoveries of the Panhandle district during the six months' period was the Empire Gas & Fuel Co.'s No. 1 Fields, in Section 13, Block 7, I.&G.N. Survey, west of the town of White Deer in Carson County, the first discovery south of the Granite Ridge from which production is obtained in the Panhandle counties. The granite wash pay was topped at 3,200-05 feet with an increase at 3,220-32 feet and the well completed at the latter depth flowing 1,256 bbls. in 21 hours, with 30 pounds rock pressure. Since this discovery, two other offset wells have been drilled, one of them making only a small gasser and the other a small oil producer, consequently the area has slumped in interest, and the pool does not look to have many possibilities as was first considered. The nearest production to this pool is the Roxana Pool, about 11 miles to the northeast.

Gas the Desirable Commodity

The main features of interest in the Panhandle for the past three months have been the three large gas lines which were started construction out of this district to cities in the North of which more extended mention is made elsewhere in a special article on gas pipe lines. These lines will require an enormous amount of gas from the gas-producing counties of

(Continued on Page 229)

NORTH TEXAS

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Ttl. 6 mths. (bbls.)
BURKBURNETT:							
Daily average	9,063	9,201	9,197	9,411	9,302	9,073	
Month	280,953	257,628	285,107	282,330	288,362	272,190	1,666,570
ELECTRA:							
Daily average	11,410	11,582	11,494	11,516	11,166	11,077	
Month	353,710	324,296	356,314	345,480	346,146	332,310	2,058,256
IOWA PARK, K.M.A.:							
Daily average	4,715	4,904	4,816	4,914	4,680	5,017	
Month	146,165	137,312	149,296	147,420	145,080	150,510	875,783
ARCHER COUNTY:							
Daily average	17,357	17,826	18,012	19,342	19,165	19,010	
Month	538,067	499,128	558,372	580,260	594,115	570,300	3,340,242
CLAY COUNTY:							
Daily average	1,013	849	758	722	882	747	
Month	31,403	23,772	23,498	21,660	27,342	22,410	150,085
WILBARGER COUNTY:							
Daily average	25,487	25,801	24,841	24,645	24,046	23,756	
Month	790,097	722,428	770,071	739,350	745,426	712,680	4,480,052
MONTAGUE COUNTY:							
Daily average	6,411	6,427	6,462	6,664	6,857	6,738	
Month	198,741	179,956	200,322	199,920	212,567	202,140	1,193,646
YOUNG COUNTY:							
Daily average	8,435	9,690	11,352	19,499	20,549	20,981	
Month	261,485	271,320	351,912	584,970	637,019	629,430	2,736,136
BAYLOR COUNTY:							
Daily average	380	602	1,037	1,076	1,295	1,308	
Month	11,780	16,856	32,147	32,280	40,145	39,240	172,448
COOKE COUNTY:							
Daily average	4,821	4,446	4,057	3,792	3,584	3,531	
Month	149,451	124,488	125,767	113,760	111,104	105,930	730,500
FOARD COUNTY:							
Daily average	211	236	251	205	195	196	
Month	6,541	6,608	7,781	6,150	6,045	5,880	39,005
Daily average	89,303	91,564	92,277	101,786	101,721	101,434	96,369
Total first six months 1930	2,768,393	2,563,792	2,860,587	3,053,580	3,153,351	3,043,020	17,442,723
Total first six months 1929	2,794,619	2,412,788	2,760,705	2,729,250	2,793,286	2,759,550	16,250,198
Total first six months 1928	2,441,002	2,247,790	2,483,100	2,465,970	2,600,559	2,687,207	14,925,628

TEXAS PANHANDLE

	January	February	March	April	May	June	Ttl. 6 mths.
Daily average	23,856	24,124	22,508	22,162	22,573	23,123	
Month	739,536	675,472	697,748	664,860	699,763	693,704	4,171,083
CARSON COUNTY:							
Daily average	9,325	9,592	9,779	9,572	9,231	8,728	
Month	289,075	268,576	303,149	287,160	286,161	261,836	1,695,957
GRAY COUNTY:							
Daily average	51,360	53,233	55,397	61,566	73,497	72,360	
Month	1,592,160	1,490,524	1,717,307	1,846,980	2,278,407	2,170,796	11,096,174
MOORE COUNTY:							
Daily average	566	628	554	513	442	353	
Month	17,546	17,584	17,174	15,390	13,702	10,590	91,986
WHEELER COUNTY:							
Daily average	551	533	503	712	611	662	
Month	17,081	14,924	15,593	21,360	18,941	19,858	107,757
POTTER COUNTY:							
Daily average	.....	.....	.....	7	11	5	
Month	.....	.....	.....	210	341	157	708
Daily average	85,658	88,110	88,741	94,532	106,365	105,231	94,827
Total first six months 1930	2,655,398	2,467,080	2,750,971	2,835,960	3,297,315	3,156,941	17,163,665
Total first six months 1929	1,882,878	1,582,196	1,845,213	1,834,980	2,086,579	2,623,680	11,855,526
Total first six months 1928	2,408,359	2,287,607	2,253,173	2,044,020	2,115,409	1,965,484	13,074,052

CENTRAL TEXAS

	January	February	March	April	May	June	Total 6 mos.
RUNNELS COUNTY:							
Daily average	16	15	17	10	14	16	
Month	496	420	527	304	434	480	2,661
COLEMAN COUNTY:							
Daily average	5,045	4,969	4,972	4,205	3,629	3,789	
Month	156,395	139,132	154,132	126,156	112,499	113,670	801,984
COMANCHE COUNTY:							
Daily average	160	195	160	170	156	377	
Month	4,960	5,460	4,960	5,097	4,836	11,310	36,623
STEPHENS COUNTY:							
Daily average	5,313	5,862	6,062	6,206	6,041	5,816	
Month	164,703	164,136	187,922	186,188	187,271	174,480	1,064,700
EASTLAND COUNTY:							
Daily average	5,059	5,271	4,977	5,324	5,436	5,514	
Month	156,829	147,588	154,287	159,711	168,516	165,420	952,351
BROWN COUNTY:							
Daily average	8,263	7,860	6,904	6,732	6,543	6,659	
Month	256,153	220,080	214,024	201,960	202,833	199,770	1,294,820
CALLAHAN COUNTY:							
Daily average	3,342	3,720	3,524	3,993	3,852	3,849	
Month	103,602	104,160	109,244	119,784	119,412	115,470	671,672
THROCKMORTON COUNTY:							
Daily average	703	844	1,153	1,213	1,062	1,060	
Month	21,793	23,632	35,898	36,388	32,922	31,800	182,433
JACK COUNTY:							
Daily average	4,079	4,290	4,146	3,821	3,475	3,564	
Month	126,449	120,120	128,526	114,632	108,345	106,920	704,992
HASKELL COUNTY:							
Daily average	61	66	55	46	59	56	
Month	1,891	1,848	1,705	1,383	1,829	1,680	10,336
PALO PINTO COUNTY							
Daily average	654	740	642	649	643	632	
Month	20,274	20,720	19,902	19,464	19,933	18,960	119,253
SHACKELFORD COUNTY:							
Daily average	8,047	6,500	6,262	6,652	6,741	6,186	
Month	249,457	182,000	194,122	199,567	208,971	185,580	1,219,697
JONES COUNTY:							
Daily average	2,149	2,207	1,322	1,445	1,387	1,354	
Month	66,619	61,796	40,982	43,336	42,997	40,620	296,350
ERATH COUNTY:							
Daily average	228	239	241	218	238	216	
Month	7,068	6,692	7,471	6,540	7,378	6,480	41,629
Daily average	43,119	42,779	40,442	40,684	39,296	39,088	40,351
Total first six months 1930	1,336,689	1,197,784	1,253,702	1,220,510	1,218,176	1,172,640	7,399,501
Total first six months 1929	1,574,423	1,368,304	1,515,249	1,451,880	1,539,057	1,471,350	8,920,263
Total first six months 1928	1,402,754	1,381,096	1,465,029	1,422,150	1,477,119	1,473,111	8,621,259

Mt. Pleasant Michigan's Leading Pool

Muskegon's Place as a Leader Taken by Centrally Located Oil Area. A Conservative Development This Year

By Paul A. Elliott

For a third time since the opening of Michigan's first commercial oil field at Saginaw in 1925, the center of oil well operations, greatest production of crude oil and the most indications of future success shifted during the first six months of 1930.

During the period since January 1, 1930, the Mount Pleasant Field of central Michigan has steadily forged ahead of the Muskegon Field of western Michigan, which for two years had been the center of oil operations in the State until today the city of Mount Pleasant is now the new center of oil activity.

A few operators have continued to drill in the Muskegon Field, others have deepened their wells from the upper to the lower Traverse or Dundee formation and some are now planning to drill a deep test to a maximum depth of 5,200 feet within the proved field.

But despite this activity, daily production of crude oil in the western Michigan Field has gradually declined and the number of abandoned wells has increased. As compared with the record of the field on December 15, 1929, there are now practically the same number of producing oil wells, fewer gas wells, about the same number of dry holes, but about double the number of abandoned holes that were producing wells. There also are not more than one-third as many active wells in the field as there were six months ago.

Mount Pleasant's Advance

As compared with this situation in the Muskegon Field, the Mount Pleasant Field has a much more impressive record. In six months the number of oil producers in the central Michigan Field has been increased about 60 per cent, only two new dry holes having been drilled in the proven field and five wildcat wells have struck gas or oil in commercial quantities.

As yet none of the areas surrounding these five good wildcat wells has been developed to an extent sufficient to indicate what may be expected in the way of new Michigan pools. One, however, was the largest wildcat oil well ever brought in during the recent history of oil development in Michigan and it is almost certain that it will be the discovery well of a new pool.

In oil production as well as general activity the Mount Pleasant Field gradually has pulled away from the Muskegon Field until now the average daily production of the central Michigan Field is more than double that of the western Michigan area.

At the first of the six months' period the Muskegon Field was still producing about 6,000 bbls. a day of mostly Dundee crude oil and the Mount Pleasant Field was barely exceeding this figure at about 6,500 bbls. a day.

During the first 90 days, or three months, of 1930, the Muskegon Field averaged about 5,000 bbls. a day for a total of 450,000 bbls. as compared with 585,000 bbls. produced at Mount Pleasant with an average of 6,500 bbls. a day.

During the next 60 days, or two months, Muskegon's daily production had declined to about 4,000 bbls. for a total of 240,000 bbls. while Mount Pleasant, despite a 30-day shutdown on new drilling activities, was making about 7,000 bbls. a day for a total of 420,000 bbls.

The last month of the six months' period saw the Muskegon Field making an average of not much more than 3,000 bbls. a day for a total of about 100,000 bbls. and the Mount Pleasant Field doing at least 7,500 bbls. for a total of 225,000 bbls.

Adding to this total the comparatively small production of the old Saginaw Field, Michigan has produced slightly more than 2,000,000 bbls. of crude oil during the first six months of 1930.

At the present rate, however, the State is not going to equal the high record of production set in 1929 when the Muskegon Field was at its peak. For it is estimated that during 1929 more than 5,000,000 bbls. of oil was produced. Of the total more than 3,500,000 bbls. came from the Muskegon Field and about 1,500,000 bbls. came from the Mount Pleasant Field.

Natural gas production for the first six months of 1930 also has fallen much below the 1929 record when about 3,500,000,000 feet was produced and consumed in Muskegon. To July 1, 1930, not more than 800,000 feet, or less than one-fourth of the 1929 total, had been produced from the Muskegon Field, the only place in the State where natural gas has been produced for commercial purposes.

Basing computations on these figures for production in both the Muskegon and Mount Pleasant Fields, however, aggregate returns have exceeded initial investment in drilling costs by a comparatively small amount. This has not taken into consideration operating costs which are comparatively heavy in Michigan because of the necessity of cleaning wells frequently to clear out the paraffin.

With a total of almost exactly 500 completed wells about $5,000,000 has been spent for drilling expenses alone in the Muskegon Field since it was opened in December, 1927, by the Muskegon Oil Corp.'s discovery well. For the average well in the Muskegon Field will cost $10,000 to drill to say nothing of the subsequent operating expense and the cost of leases.

Returns from the sale of oil and gas in the Muskegon Field are estimated to have been nearly $6,000,000. This figure has been computed by using $1.50 as the average price of crude per barrel for the 1928 production of 350,000 bbls., $1 a barrel for the 1929 peak production of 3,800,000 bbls. and $1.50 again for the production of 800,000 bbls. during the first six months of 1930.

Sale of 4,400,000,000 feet of natural gas at an average price of about 10 cents per foot accounts for $440,000 of the total revenue while crude oil has brought the Muskegon producers about $5,475,000 making a grand total to date of about $5,915,000.

It would be almost impossible to estimate how much leases within the proved field cost the operating companies. Many of them especially in the Muskegon Township area of the field were purchased at a nominal price while one 120-acre lease in the Laketown Township area of the field brought $56,000 to the owner who had drilled the first producer on it. Several small leases brought as high as $1,000 an acre.

There has been an additional investment of about $1,000,000 for oil and gas pipe lines and about $750,000 for four refineries in the Muskegon Field. The cost of these, of course, cannot be charged against the crude oil or natural gas produced but nevertheless it is interesting to know how much the oil business has meant to the State of Michigan in a short period of three years.

A survey of the Muskegon Field as (Continued on Page 264)

VAN POOL CAUSED REVIVAL OF WORK IN EAST CENTRAL TEXAS

By L. E. Bredberg

East Central Texas has seen the flow and ebb of wildcatting and leasing activities in the past six months, with the height of leasing activities in the months of January and February, and wildcatting following upon the heels of the many "plays," in an endeavor to pick up production in the Woodbine sand from which the Van Field, Van Zandt County, is producing.

The Van Field is responsible for the revival of activity in East Central Texas. This field was uncovered October 14, 1929, by the Pure Oil Co.'s No. 1 Jarman, located in the Nacagdoches County School Lands Survey, just north of the town of Van, opening up a 35 gravity Woodbine sand field which now extends about 3½ miles from southwest to northeast, defined on the east and west by small pumpers and dry holes, with the north end also defined, and the northeast defined.

Top of the Woodbine sand was found at 2,656 feet in the discovery well, and the hole bottomed at 2,710 feet, but since producing for the past seven months the discovery well was rigged up and deepened. Several hundred feet of saturated sand are found in some of the wells of this pool, which makes it an especially promising one in production per acre.

Van's Big Potential

Most of the wells are flowing through three-eighths and one-half inch chokes for the purpose of holding the production of the field to about 25,000 bbls. daily, while it has a potential of about 15 times that amount. The 10-inch pipe line of the Pure-Van Pipe Line Co. from the field to Smith's Bluff on the Gulf Coast is transporting from 25,000 to 30,000 bbls. per day with three main stations pumping the oil, while three booster stations are being constructed to enlarge the capacity of the line in case a larger amount of oil is desired to be run through the line. Oil was started through the line July 11.

For the past six months a 10-inch line to a loading rack at Chandler has been

(Continued on Page 260)

EAST CENTRAL TEXAS

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BOGGY CREEK:							
Daily average	3,339	3,525	3,503	3,578	3,615	3,612	
Month	103,515	98,700	108,590	107,350	112,060	108,371	638,586
CEDAR CREEK:							
Daily average	54	47	49	61	47	33	
Month	1,670	1,330	1,530	1,840	1,465	988	8,823
CURRIE:							
Daily average	379	368	372	385	357	319	
Month	11,745	10,311	11,529	11,553	11,063	9,581	65,782
HILL COUNTY:							
Daily average	81	56	45	45	13	34	
Month	2,522	1,575	1,395	1,350	405	1,020	8,267
MEXIA:							
Daily average	4,617	4,377	4,202	4,195	4,273	4,229	
Month	143,140	122,542	130,275	125,853	132,467	126,862	781,139
MINERVA:							
Daily average	565	553	484	470	567	564	
Month	17,500	15,470	14,990	14,100	17,572	16,921	96,553
NIGGER CREEK:							
Daily average	256	222	194	212	211	188	
Month	7,950	6,230	6,008	6,365	6,535	5,636	38,724
POWELL:							
Daily average	6,584	6,278	5,883	5,853	5,832	5,782	
Month	204,101	175,788	182,377	175,589	180,799	173,466	1,092,100
RICHLAND:							
Daily average	303	269	239	230	236	220	
Month	9,395	7,525	7,420	6,905	7,325	6,600	45,170
THRALL:							
Daily average	87	426	73	38	42	41	
Month	2,685	11,921	2,270	1,146	1,294	1,227	20,543
VAN:							
Daily average	4,407	7,202	10,322	18,421	22,493	25,160	
Month	136,625	201,663	319,990	552,625	697,276	754,792	2,662,971
WORTHAM:							
Daily average	925	907	885	864	846	814	
Month	28,675	25,400	27,425	25,918	26,240	24,423	158,073
Daily average	21,597	24,230	26,251	34,352	38,532	40,996	31,032
Total first six months 1930	669,523	678,455	813,799	1,030,567	1,194,501	1,229,886	5,616,731
Total first six months 1929	675,021	579,471	666,569	605,389	608,505	577,820	3,712,775
Total first six months 1928	797,384	727,284	780,967	727,455	736,122	706,269	4,475,481
Total first six months 1927	1,479,568	398,208	1,442,554	1,254,690	1,066,028	1,032,720	7,673,768
Total first six months 1926	1,928,851	759,548	1,822,614	1,763,970	1,703,853	1,557,780	10,536,616
Total first six months 1925	6,376,886	518,416	4,888,917	4,111,490	3,863,375	3,379,740	27,138,824
Total first six months 1924	4,177,591	241,507	5,073,367	4,629,510	4,283,859	3,918,390	26,324,224
Total first six months 1923	2,010,702	780,465	1,996,015	1,833,301	1,928,871	2,209,222	11,758,576

Sheldon-Burden

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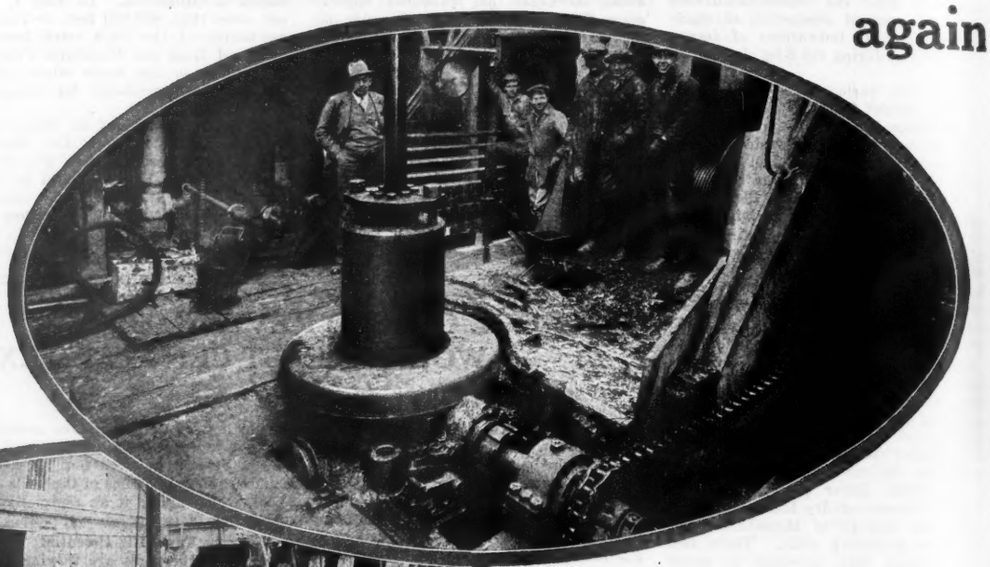
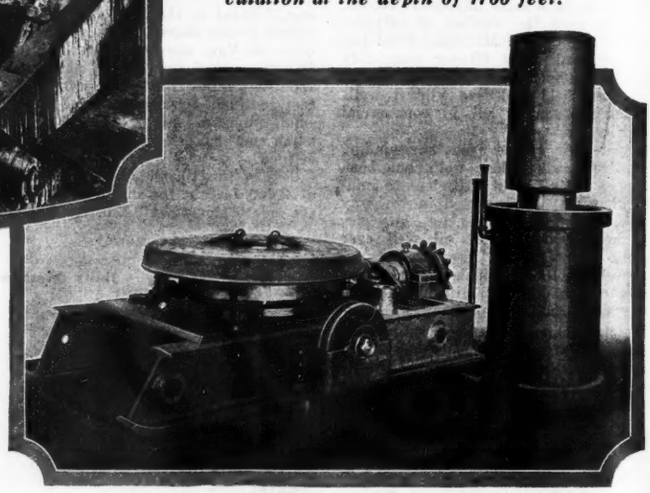


Mills City, Well No. 1, Turner Valley, Calgary, Canada. Drilling against rock pressure of 1500 pounds with oil circulation at the depth of 4700 feet.

Mills City, Well No. 2, Turner Valley, Calgary, Canada. Drilling depth, 5284 feet. Circulating with oil, carrying pressure controls for handling three thousand-pound rock pressure.



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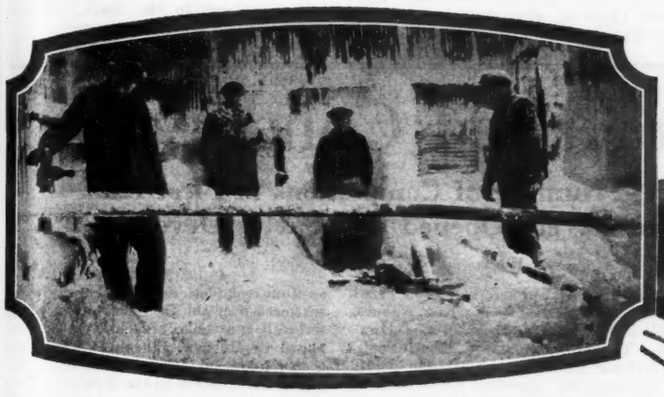

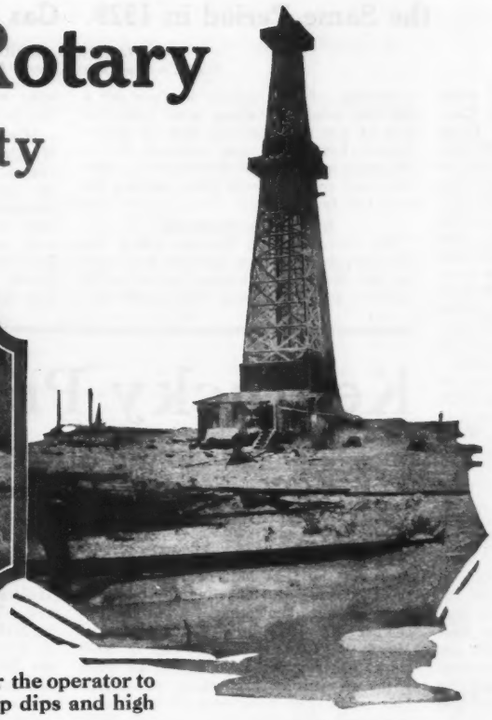

TURNER VALLEY presents some difficult problems for the operator to overcome— such as: hard abrasive formations with steep dips and high gas pressures, deep wells and extreme cold in winter.

That Sheldon-Burden Hydraulic Feed Rotary Tables have proven their superiority under these severe conditions is testified to by the various users of the equipment.

One oil company who uses it says, "The Hydraulic Feed is as far superior to the .... Feed as the .... Feed is over the ordinary rotary."

A consulting geologist who has been watching the performance of Sheldon Equipment says, "The Sheldon-Burden Hydraulic Rotary is the ideal system for drilling in wells in Turner Valley."

A well-known and successful drilling contractor who owns and uses this equipment says, "You have convinced us absolutely of the Hydraulic idea for Rotary Drilling."

Another equally as well known and successful drilling contractor who bought a Sheldon-Burden Hydraulic Feed Rotary Table to try it out is evidently convinced as to its superiority, for he states: "Every one of our rigs in Turner Valley will be equipped with the Hydraulic Feed in the future."

Another oil company who owns and uses Sheldon Equipment states: "Thoroughly satisfied with the operation of Sheldon-Burden Hydraulic so far."

Earned praise of the above kind should convince any progressive operator that Sheldon Equipment is definitely superior to ordinary equipment. If you haven't investigated its various merits, why not do so now? Start in by writing us for descriptive matter.

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-BURDEN
ROTARY TABLES

Busy Half Year in Central West Area

Results in New Production Declined Compared With the Same Period in 1929. Gas an Important Factor

By George A. Whitney
Staff Correspondent, Central West Fields

A general review of development work over the various divisions of the Central West Field, comprising the Lima Field, of northwestern Ohio, Central Ohio Field, Indiana, Illinois and Michigan for the first half of 1930 made a very fair showing with a total of 1,048 wells completed, of which 444 were producers with an initial production of 29,661 bbls.; 319 dry holes and 285 gas wells, while the first half of 1929, the same fields completed 1,080 wells, 617 producers with an initial of 90,079 bbls.; 323 dry holes and 294 gas wells, showing a difference in favor of the first half of 1929 of 32 completions, 60,418 bbls. initial production; four more dry holes and nine more gas wells. During the first half of 1929 there were 157 old wells pulled out and abandoned while for the first half of 1930 there were 282 abandoned holes, an increase of 125.

Central Ohio as usual was the busy spot in the Central West Field, which is an old gas producing area, but during the first half of this year 582 wells were completed as against 609 in the same period last year. The oil wells numbered 190, with a total initial production of 9,178 bbls., as against 178 oil wells and 5,180 bbls. new production in the first half of last year. A total of 234 gas wells completed against 249 for the same period last year, while the dry holes for the first half of this year numbered 158 against 182 last year.

Lima Field

The old Lima Field of northwestern Ohio is playing for only normal sized oil producers, as they can hardly expect anything else after 45 years of drainage. Just at this time developing new gas areas is about the most important element in the field, especially in Seneca, Ottawa, Sandusky and Hardin Counties as there is a ready market, even for the well of small volume. Among some of the most important developments of the wildcat order for the period in review the following are worthy of special mention: Some miles to the west of the old Trenton Rock belt, and in Damascus Township, Henry County, a 30-bbl. initial well was found on the McClure farm, Section 26, at 1,746 feet, and another test is now drilling on the D. J. Creager in Section 27, same township, and if it proves as good as the McClure farm well, it should bring about some additional work in that county. Another important wildcat strike was made by the Kemrow Co., on the Sidney Sites in Section 14, Cessna Township, Hardin County, far away from production and on the south side of the old Lima Field, which well produced 40 bbls. initially. This was in March, and the next well in that area was good for 60 bbls. initial. It was drilled by the Geiger Oil Co., on the Geiger farm, Section 13, same township, and several new wells are under way for both gas and oil as the gas usually runs close to 250,000 feet initial production. Town lot drilling started in Norwalk, in Huron County, and three small gas producers were brought in during May. During June a test well drilled by Dillon & Weed on the Henry Butz farm, Section 28, Monclova Township, Lucas County, and 4 miles in advance of production pumped an initial of 12 bbls. at 1,385 feet and may lead up to further test work to the west of Toledo.

Results in Indiana

Indiana, especially the southwest and west sections of the State, is getting a fair play with good results in both gas and oil. The better oil producers were found in the Oakland City Field of Pike County. The William Bell and others' test on the Berkley Hill lease, in Clay Township, of that county in June got a 100-bbl. producer, along with 1,000,000 feet of gas at 1,525 feet and in Washington Township, same county, C. E. Wommer struck a 4,500,000-foot gas well in a test on the Frank Hale, Section 30, at 1,121 feet.

Illinois Developments

St. Clair County, Illinois, along the Mississippi River has had the best play in that State, the oil being found in the Trenton formation from 500 to 800 feet, some of the wells starting with an initial better than 100 bbls.

More wildcatting is being done in Michigan than all the balance of the Central West Field, and if some of the old timers that shunned Michigan as a prospect for oil and gas back in the early days of the Lima Field, could only look over conditions at Mount Pleasant, in Isabella and Midland Counties, they would think of what they had missed. The first half of 1930 shows that 151 wells were completed in Michigan; 88 were producers with an initial of 15,773 bbls. There were 54 dry holes and nine gas wells. Isabella County leading, and taken away the lead from Muskegon, although the wells in the Mount Pleasant area did not show the flush production that Muskegon did, for the first half of 1929 the Muskegon Field was at its height, as during that period 248 wells were completed in the State, 168 pro-

(Continued on Page 259)

Kentucky Practiced Conservation

Long Shutdown Affected Number of Completions in First Half of Year, but New Pools Were Opened and Partly Developed

By Whit

Fewer wells were completed in Kentucky in the first half of 1930 than in the first half of 1929, due to the three months shut down that started on December 15, 1929, and continued until March 15, 1930. The first half of 1930 shows 551 completed wells; 338 oil wells with an initial production of 11,810 bbls.; 167 dry holes and 46 gas wells, compared with the first half of 1929, when there were 616 completions; 385 producers, with an initial of 15,635 bbls.; 198 dry holes and 33 gas wells, the decrease amounting to 65 completions, 3,825 bbls. less production, 29 fewer dry holes and 13 fewer oil wells.

The feature of the Tri-County Field is the fact that it has held up the Kentucky end of the industry and the goodly production must be credited to the Stray sand formation in which large shallow producers were found. Just before the shut down in December, 1929, the Stray sand was found to be very productive in the Buford Pool, where two years or so ago a couple of small wells were completed on the chicken farm of Vincent J. Steele in the western part of Ohio County. It looked as though that part of the county had seen its best days when in the same formation and to the east of the Buford Pool, initially large wells were found in the Bartlett, just southwest of Taffey, Ohio County. Then came the opening of another rich pool in the same formation known as the Barnett Creek Church Pool, followed by another pool, termed the Morgan Pool, northwest of the Barnett Creek Church Pool, then came the opening of the Buford Pool, when a well drilled on the Wiggington farm, struck a big production in the Stray sand, northwest of the Morgan and Barnett Creek Church Pools, and just east of the chicken farm owned by Steele. The gushers on the Wiggington, Stewart and other adjoining lease, that helped materially in swelling the daily production of oil in the Tri-County Field. Territory that had been overlooked in Ohio County, is coming rapidly to the front, for there is no telling where a Stray sand pool may lie. There are three other sands below the Stray, the Jackson, Jett and Barlow, which have all proven production although the Jackson sand is more of a gas sand than oil.

The leading producing pools in Ohio County are: Ambrose-Weller, Bartlett, Taffy, Barnett Creek Church, Morgan, Buford, Friendship Church, Deanfield, Bells Run, Haynesville, Whittaker and Mangan. The recently discovered Maxwell Pool lies in three counties, Ohio, Daviess and McLean. In Daviess County, the leading productive pools are: Utica, Red Hill, Cane Run, Jones, Whitesville, Burton, Maxwell and Howard. The Maxwell and Calhoun Pools, in McLean County, are the main points of development. Another active field is the Niagara Pool, in Henderson County, but the county is not as producitve as the two other counties above mentioned, and many dry holes have been found in Henderson. The Pellville Pool, in Hancock County, has had little work done in the past few months, but bids fair to show a renewal in the immediate future for both oil and gas. Gas is being sought for more than oil, for there is a ready market in most of the oil producing counties, as the Missouri-Kansas Pipe Line Co. is connecting up many of the main towns throughout the western Kentucky area. There has been a scarcity of completions in the Greenville Field of Muhlenberg County, where the oil pay, about 2,000 feet deep, is known as the McClosky sand. In January, the first reported well was a gasser on the W. E. Drake estate, drilled by the Benedum-Trees interests. It was said to show a volume of 5,000,000 feet, at a depth of 863 feet. The well was located southwest of Greenville about 12 miles, and about 8 miles south of the Greenville oil producing area.

The theory of oil men in general has been that no oil or gas would be found to the south of what is known as Rough Creek Fault, but this has been exploded, and indications are for much test work in that area as soon as the heavy producing Stray sand pools have been developed.

The older fields in the east end of Kentucky show little activity, and many of the old timers in the Beattyville, Painsville, Louisa and other fields that have been large producing areas, are now operating in the western part of the State.

Just at this time, the average operator in the Tri-County area is looking to the southwestern part of Kentucky to be a big producer of both oil and gas. Many structures are known to exist in the Counties of Webster, Hopkins, Caldwell, Christian, Trigg, Crittenden, Lyon, Marshall, Galloway, McCracken, Graves, Livingston, Hickman, Ballard, Fulton, Todd, Logan, Butler, Edmonson, Grayson, Meade, Hardin, Green, Hart, Metcalf, Marion and Larue.

In June a 4,000,000-foot gas well was reported from Metcalf County.

TENNESSEE

The only reports of completed wells in Tennessee in the first half of 1930 came late in the half year and are reported as June completions although they were scattered over the first six months. They were all gas wells, nine in number, completed in Morgan, Lincoln, Dickson and Smith Counties. Benedum & Trees completed four gassers in the Sunbright Field of Morgan County ranging from 50,000 to 4,500,000 feet in initial production. The Eastern Tennessee Oil & Gas Co. drilled two in the same field good for 2,000,000 feet each initially; the United Light & Power Co.'s No. 1 Dickey near Smithland, Lincoln County, started at 2,000,000 feet; J. T. Newell and others' No. 1 Oakley, 8 miles north of Whit Bluff, Dickson County, 500,000 feet; and Kirkwood & Campbell's No. 1 on town lot in Carthage, Smith County.

Following is the record of field work in Kentucky for the first half of the year, giving the total number of completions, the total initial oil production, the number of dry holes and the gas wells, by county and by month:

KENTUCKY
Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	61	1,245	15	4
February	66	784	30	9
March	82	2,893	20	4
April	127	2,371	32	5
May	94	2,636	32	6
June	121	1,881	37	17
First half 1930	551	11,810	166	47
First half 1929	616	15,635	198	33
Difference	65	3,825	32	14

Completions by County

County—	Comp.	Prod.	Dry	Gas
Warren	12	17	6	0
Ohio	257	7,439	76	22
Daviess	100	2,184	38	4
Hancock	7	110	0	0
McLean	19	460	5	0
Henderson	77	968	27	5
Muhlenberg	8	385	1	3
Hopkins	2	0	1	1
Christian	1	0	0	1
Cumberland	2	0	1	1
Wayne	9	10	6	0
Powell	1	7	0	0
Estill	1	3	0	0
Morgan	1	2	0	0
Wolfe	2	1	1	0
Lee-Owsley	3	15	0	0
Lawrence-Johnson	21	148	0	0
Johnson-Magoffin	13	42	1	1
Clay	4	0	1	3
Jackson	3	0	2	1
Knox	2	0	0	2
Perry	1	0	0	1
McCreary	3	19	0	0
Metcalf	1	0	0	1
Bell	1	0	0	1
Total	551	11,810	166	47

TENNESSEE
Completed in June

County—	Comp.	Prod.	Dry	Gas
Morgan	6	0	0	6
Lincoln	1	0	0	1
Dickson	1	0	0	1
Smith	1	0	0	1
Total	9	0	0	9

STABILIZATION WAS CALIFORNIA FEATURE

(Continued from Page 140)

day within a short time by additional drilling and the opening up of present curtailed fields. Although the potential daily production of approximately 1,100,000 bbls. assigned to California by the fact finding committee appears too high, it represents a more conservative figure than those used in other parts of the country because California's potential is based on an actual five-day production test, in contrast with other productive areas of the United States where potentials are established on the basis of production tests for a few hours.

No Important Discoveries

No important discoveries were chalked up during the first six months of 1930, although there are several promising wildcats under way at the present time. The most important development from a production standpoint was the abnormal drop registered by Santa Fe Springs where daily production declined from 171,042 bbls. per day during January, 1930, to 115,000 bbls. daily in June. The Midway-Sunset Field of Kern County also registered a substantial decrease due to smaller production in the Maricopa Flats section where the period of flush production ceased following attainment of the area's peak early in the year. Long Beach, due to the enormous thickness of oil bearing formation, did not register any substantial change, production early in July, 1930, being only a few thousand barrels per day less than the production at the beginning of the year. The Elwood Field, due to extension of development work out into the open ocean, was considerably higher in June than at the beginning of the year. This is in spite of the fact that drilling was conducted on a conservative basis and practically free from competitive development.

Defeat of the California gas conservation law as far as enforcement is concerned was an outstanding development in California during the year to date. The validity of this law has not yet been determined although a decision should be forthcoming shortly as it is pending in the State Supreme Court. During the consideration of this measure, which was carried to the Supreme Court following Judge William Hazlett's decision that the law was constitutional, the District Court of Appeals issued a temporary writ of injunction prohibiting Judge Hazlett from compelling Santa Fe Springs' operators to abide by his injunction. A similar case involving wastage of natural gas at Long Beach was decided adversely by another Superior Court judge in whose department this case was heard. The situation at Long Beach, however, is still open for final decision as the preliminary hearing involved only the granting of a temporary injunction pending ultimate outcome of the case. The gas law was also precluded from becoming effective at Kettleman Hills when the Superior Court at Hanford postponed action until later in the year on the assumption that decision of the State Supreme Court would probably be announced before that time.

PRODUCERS KEPT CRUDE OIL IN THE GROUND

(Continued from Page 55)

began to show its tremendous potentiality in the latter part of June. Hobbs is destined to become a great oil field and there is nothing to indicate that other big fields may not be found in southwestern New Mexico. In California the Kettleman Hills Field, which has barely been scratched for oil, is another big field of the future. Both Hobbs and Kettleman Hills are under severe restrictions as to drilling and production and conservation measures will be carried out there as long as there is no need for the flood of oil believed to underlie the surface in both fields. Van, in Van Zandt County, Texas, is another pool that has hardly begun to show what it can do as a producer of oil. It will undoubtedly have a large ultimate production and an unusual production per acre because of the thickness and richness of the sand.

Greater Reduction in Last Half

The second half of the year is expected to show a greater decline in production than was indicated by the figures for the first half. It is expected that production will not be permitted to average much higher than 2,500,000 bbls. unless a need for it is developed while in the last half of last year the average was 2,817,089 bbls. per day.

No trouble is anticipated in keeping production down to demands. The splendid spirit shown by the state officials in New Mexico in meeting the overproduction threat in that State by co-operating with the oil producers removes the last vestige of danger. The state governments of California, Oklahoma, Texas and New Mexico are backing up the producers in their efforts to avoid overproduction and consequent economic waste, while in other states where there is more oil than the industry requires voluntary curtailment is looked upon as the proper procedure.

CALIFORNIA POTENTIAL DAILY PRODUCTION—1929-1930 INCLUSIVE

(Barrels)

1930—	Marketable daily production	No. of wells producing	Curtailed: Daily production	Curtailed: No. of wells	Total potential: Daily product'on	Total potential: No. of wells
January	709,137	10,336	308,870	4,358	1,018,007	14,744
February	745,916	10,180	236,846	4,640	982,762	14,820
March	635,483	9,533	262,796	5,374	898,279	14,907
April	625,625	9,589	291,437	5,483	917,062	15,072
May	614,337	9,443	270,123	5,592	884,460	15,035
June	600,693	9,446	282,283	5,631	882,976	15,077
Daily average	654,159	9,763	276,432	5,180	930,591	14,943

TOTAL FLUID STOCKS OF PETROLEUM HELD IN PACIFIC COAST TERRITORY

(Barrels)

1930—	Heavy crude and fuel	Refinable crude	Gasol'ne	Naphtha distillates	All other stocks	Total all stocks
January 31	113,073,237	42,068,114	17,799,026	3,281,669	10,124,467	186,346,503
February 28	113,687,953	44,341,155	18,755,619	3,188,949	9,725,047	189,698,723
March 31	113,123,700	44,810,122	18,373,397	3,697,674	8,965,485	188,970,378
April 30	112,198,691	44,475,703	18,046,275	3,832,736	8,639,354	187,192,759
May 31	112,777,460	43,749,958	18,643,033	3,678,131	8,882,952	187,731,534
June 30	113,036,486	41,863,482	17,108,859	3,640,114	8,693,311	184,342,252

PRODUCTION OF CRUDE BY MONTHS—CALIFORNIA OIL DISTRICTS

(Barrels of 42 U. S. gallons)

Month—	1930: Total barrels	1930: Daily average	1929: Total barrels	1929: Daily average
January	21,983,242	709,137	23,385,939	754,385
February	20,885,660	745,916	22,300,707	796,454
March	19,699,979	635,483	24,324,729	784,669
April	18,768,743	625,625	23,295,060	776,502
May	19,044,444	614,337	24,053,351	775,915
June	18,020,795	600,693	24,624,627	820,821
Total first half	118,402,863	654,159	141,984,413	784,444

CALIFORNIA FIELD OPERATIONS BY MONTHS FOR FIRST HALF YEAR 1930

1930—	Wells completed: No.	Wells completed: Bbls. daily	Wells: Drilling	Wells: Producing	Abandoned: Drillers	Abandoned: Producers	New rigs
January	77	103,661	494	10,386	30	35	56
February	53	28,747	482	10,180	20	17	59
March	79	45,924	408	9,533	30	27	61
April	54	42,142	413	9,589	26	26	100
May	64	34,954	431	9,443	25	21	75
June	52	42,522	410	9,446	12	25	80
Total first half year 1930	379	297,950			143	151	431
Total first half year 1929	473	706,362			134	125	765
Total first half year 1928	351	273,782			104	184	549
Total first half year 1927	531	314,141			171	147	635
Total first half year 1926	496	154,531			140	112	509

INITIAL PRODUCTION RECORDS ARE BROKEN

(Continued from Page 122)

estimated at 12,000 bbls. It was located in the Ritz Pool.

Hobbs Field's Importance

No area in the country attracted more general attention than Lea County, in southeastern New Mexico. It is a Permian lime district, immediately related geologically to the fields of West Texas. The Hobbs Pool, in Lea County, while discovered previous to this year, was not regarded as important until 1930, but by the close of the half year it was found necessary to restrict drilling and producing. The Hobbs Pool will be a big one in area as well as in production and will no doubt be given more attention than ever in the last part of the year.

In California no important discoveries were made but deeper drilling in old fields, which brought forth big production, kept operators busy through the half year until a curb was put on because of overproduction which twice brought the price structure down temporarily. Santa Fe Springs, Midway-Sunset and Long Beach were the busiest areas in the half year.

In the Texas Panhandle, Gray County was the particularly busy area and 132 wells were completed of which 104 were oil wells averaging 903 bbls. per well in initial production. The Panhandle is one territory in the United States in which the continued low price of oil has retarded development. The big field in Gray County was a find of magnitude unexpected by many oil men familiar with that part of the Lone Star State. Outside of this there is a vast territory where production is almost 100 per cent assured but where the wells are not expected to be large and where a higher price for oil is necessary to guarantee financial success in operating.

Looking Into the Future

The overproduction of oil and the number of new pools now under development, but which are not permitted to produce more than a fraction of their potential, might be expected to hold back wildcatting, but as a matter of fact all The Oil and Gas Journal's staff of correspondents from the Pennsylvania fields to California report specific wildcat work that will be done in the balance of the year. The States of Washington, Arizona, Dakota, Idaho, Nebraska, Mississippi and Alabama, where there is no commercial oil production as yet, are regarded as possibilities and work has been started in all of them that will be pursued in the last part of the year. There is a world of territory in every state where oil or gas is produced that invites development. The western half of Oklahoma and Kansas, scores of counties in Texas, the salt dome area in the Gulf Coast, both in Texas and Louisiana, central and northern Arkansas, Michigan and southeastern New Mexico are especially inviting. Some of the large oil companies in California are much interested in the possibilities of Washington, where drilling is being done in a number of counties. A lot of leasing in blocks has been done in Nebraska by prominent operators which has caused other companies to send men into that State to look it over. By all this it can be seen that oil companies are looking into the future. This overproduction cannot last many years and they are fortifying themselves for the future. Big men in the industry are working for unitization of drilling operations to avert another such condition as confronts the industry this year. If their plans are successful the wildcat discoveries of the future will be followed by conservative development in the matter of locating and drilling.

OPERATING CONDITIONS IN HOBBS OIL POOL

(Continued from Page 59)

vided with a lease boiler in anticipation of having cut oil to treat later.

To gather and pump oil around the lease and to the pipe line one company has installed an 85-horsepower engine with pump at a cost of about $5,000. Lighting systems for the tank battery and pump station cost about $500 and consists of a small engine and generator.

There is an abundance of good water at about 90 feet and wells are devloped for drilling operations and for camp supply. They cost about $800 to $1,000 completed and the drilling cost is about

Moving mud in ditch in Hobbs Field, New Mexico.

$3.50 per foot. Water tanks are placed upon high structures to give head for the water used in the camp.

Gasoline Plants Started

It is common practice in the Hobbs area to connect the 6⅝ or 7-inch casing at the well head with a length of similar size pipe that runs from under the derrick floor to a point about 10 feet from the derrick and then turns upward to connect into the oil and gas separator.

Into this large line the 3-inch tubing is welded at a point opposite the flange in the separator. This 3-inch line leaves the tubing string above the derrick floor and is fitted with control valves. It runs level and parallel with the 7-inch pipe and about 8 feet above it. This form of connection eliminates all possible sharp bends in either pipe and should be highly efficient in conserving gas energy accompanying the oil from the well.

The gas is being piped to the atmosphere for the time being or being used for boiler fuel in drilling units but the Phillips Petroleum Co. and Shell Petroleum Corp. are now building two gasoline plants that will have approximately 30,000 and 20,000 gallons daily delivery capacity, respectively.

As the separators are now being operated about 1 gallon of gasoline is being produced for every 1,000 feet of gas handled. This is due to a 25-pound pressure being maintained on the trap which permits the lighter ends to precipitate as liquid.

As the wells are being produced now it is understood that the average gas oil ratio is about 1,200 feet per barrel of oil, but later it is hoped to so regulate this

production as to reduce this gas oil ratio to about 700 feet per barrel.

Gas from Mid-West's No. 13 State well in the south end of the field produced from a depth of about 3,500 feet showed only .36 gallon of gasoline per 1,000 feet, but it is understood that the gas from the line is running around 1 gallon per 1,000 feet and when the additional gas from the 3,100-foot sweet oil zone is produced this amount may be increased materially.

On the basis of 1 gallon per 1,000 feet of gas and 35,000 bbls. of oil produced daily with a gas oil ratio of 1,200 feet per barrel only about 42,000,000 feet of gas would be available for both plants. This is not enough but there are some gas wells in the field and it is also possible to produce some additional gas from some wells where the casing has been set high by permitting them to flow through the annular space between tubing and casing.

While the gas contains as high as 2 per cent hydrogen sulphide this is no longer presenting any difficulties in the manufacturing process as used in West Texas and Panhandle gasoline plants and it is not anticipated that there will be any trouble handling the gas from the Hobbs area.

Other Activities in New Mexico

About 25 miles east of Carlsbad the United States Potash Co. is sinking an 8'x22' shaft to a depth of 1,000 feet for the purpose of cutting three or four veins of sylvite (KCl), the lowest vein at about 950 feet below the surface.

This form of potash lends itself readily to treatment while polyhalite ($2CaSO_4 MgSO_4K_2SO_4 2H_2O$) which is found more abundantly in this Permian Basin area requires special treatment. Work is now being done by several chemists on the problem of reducing polyhalite and securing the potash in a commercial form and it is predicted that a satisfactory process will soon be evolved.

The United States Potash Co. has erected a modern mining camp near its shaft and the shaft is equipped with steel gallow frame, 5,000-pound capacity double drum electric hoist, 3-cylinder Deisel type oil engine driving direct connected generator and air compressor. Timber framing and blacksmith shop is also maintained at the shaft mouth and the plant is in every way quite complete.

The labor being used consists of expert shaft sinkers from the mining districts of New Mexico and Arizona who are working in three shifts of about eight men each. Muckers and surface men complete the labor organization and all together about 40 men are employed in this work.

The United States Government set aside about $100,000 for coring and testing this entire Permian Basin and this work is now in the fifth and last year and has developed an immense amount of potash throughout the Permian Basin in New Mexico and West Texas.

This shaft sinking operation is of particular significance to the petroleum industry as it is the first time in the United States where a shaft of this character has been sunk through sedimentaries of the same type as those in which oil is found. The experience gained in doing this work will be of value to the petroleum industry later when it becomes advisable to mine oil sands.

One interesting fact is reported in that bentonite is found in some of these cores. This material is valuable as an admixture for rotary mud and is now being imported into the oil fields from Wyoming. The thickness of the vein is not known nor its depth below the surface.

Repressuring in Artesia Field

About 640 acres in the Artesia Field, New Mexico, in Section 28-18-28, has been pooled by the Ohio Oil Co., Three Sands Oil Co., Flynn, Welsh & Yates and Eastland Oil Co. for the purpose of repressuring to secure additional oil.

It is understood that one of the typical lenzes that make up this pool is found at about 1,800 feet below the surface and covers the major portion of the 640 acres covered by leases held by the above companies.

They have combined interests and drilled an inlet well near the center of the area into which they will pump from 75,000 to 100,000 feet of dry gas daily, from the Phillips Petroleum Corp. gasoline plant at about 70 pounds input pressure.

This experiment will be watched with much interest because of the type structure involved and the probable time that will be required to build up pressure in this zone to make it effective in driving oil to the outlet wells which are already drilled and have been producing for several years.

Geological Reference

In the June 12 and 26 issues of The Oil and Gas Journal, L. Spraragen had articles about magnetometer results in New Mexico and refers particularly to the high in Lea County in the June 26 issue. His map shows this high running in a southeast-northwest direction and seems to give additional proof that this structure will be somewhat similar to the one at Winkler County, Texas, described in the paper by A. L. Ackers, R. DeChicchis and R. M. Smith published in the July 24 issue of The Oil and Gas Journal.

If this theory is proven by the drill in Hobbs area it seems safe to predict a structure equal in size to Hendricks Pool, Texas, and if it is developed in the orderly manner now agreed upon by the operators there it will be some time before the limits of the field are defined. This should insure an active field there in which intensive drilling of units will be eliminated and the pool developed in an economical manner.

EXPLODING OLD IDEAS INSTEAD OF TANKS

(Continued from Page 60)

Actual testing of tank vapor spaces in practice, however, shows that the nonvolatile oil tanks such as fuel, lubricating and kerosene contain an explosive mixture a negligible percentage of the time. Tanks containing engine distillate and many crude oils are apt to be explosive a large percentage of the time. Tanks containing gasoline and other volatile oils are explosive a very small percentage of the time.

Fire records show that tanks exposed to nearby fires are more apt to explode if they contain nonvolatile oils than if they contain volatile oils. In speaking of explosions I refer to the sudden development of pressure resulting from an ignition and do not consider what may be termed "boiler" explosions which occur when a tank is damaged owing to slowly accumulated pressure from thermal expansion of its contents or from hydrostatic pressure, etc.

Point of Ignition

When an explosive mixture of gasoline vapor and air is ignited at any point in the mixture a flame will originate at the point of ignition and progressively spread until the entire mixture has burned. It can, therefore, be understood that if a pipe line is filled with a vapor air mixture in explosive proportions and the mixture is ignited, flame will be propogated through the line. The rate of travel of a flame through a gasoline vapor air mixture varies with the proportions of air and vapor, but even with the fastest burning mixture the rate is not very fast; something less than 15 feet per second as long as the mixture is not under pressures much in excess of atmospheric.

A small mesh screen over the end of the pipe line is popularly supposed to prevent the passage of flame into the line. We have found that a screen will serve as a flame arrestor only as long as the screen does not become highly heated, and that it does not take long under most conditions before the hot screen itself will ignite the vapor on the opposite side of the fire. It is, therefore, seen that a screen is not very reliable when it is in perfect condition and we know that a screen is by nature so delicate that it is easily injured by corrosion, mechanical damage, etc., and if there is a small hole in the screen its value as a flame arrestor is entirely lost.

Cellular flame arrestors have been shown by experiment to heat up and transmit a flame in the same manner as screen flame arrestors; the cellular arrestor, however, resists flame passage for a longer time before becoming heated and has a more rugged construction than the screen.

Breather Valves

Our experiments have shown that a properly designed breather valve serves as a flame arrestor better than a screen. The principle under which the breather valve functions as a flame arrestor is that the pressure necessary to open the breather valve gives the issuing vapors a velocity greater than that of the propagation of flame so that flame cannot travel against the outcoming stream.

These references to flame arrestors have thus far all been to devices used on the open end of a pipe line. If the flame arrestor is placed inside of the pipe line any distance from the end so that pressures are exerted against the flame arrestor, a different device must be used. We have found that for this service a mechanical flame arrestor which automatically closes a valve in the line by either the heat or the pressure wave preceding the flame is the most satisfactory device thus far developed.

Let us now consider the use of steam in tanks which are apt to be exposed to a possible source of ignition such as falling sparks, lightning, exposure fire, etc. For years it has been common practice to equip oil tanks with steam smothering lines and to turn steam into the vapor space of tanks whenever it was thought that the tanks might be exposed to some source of ignition.

We have said that a 40 per cent steam concentration is necessary to insure against the presence of an explosive mixture. A 40 per cent steam concentration means that the vapor space must be heated to about 170° F. In the case of a large tank with much outage, it is seldom that a large enough steam supply is available to render the vapor space nonexplosive in any reasonable time. Often a tank will appear to be full of steam when a steam cloud is seen issuing from the openings, but as a matter of fact, steam is invisible and the fog which we see at the openings does not mean much. You know that your automobile often runs better burning a vapor air mixture containing some of the fog which occasionally visits San Francisco.

Steaming

Now where the steam supply is inadequate, and for a large tank it usually is, there is not much object in steaming. Again, if the vapor space in the tank is either too rich or too lean to explode, there is little use in steaming. Neither is it desirable to be steaming while there are sparks being produced in the neighborhood because the steam would have to displace some of the vapor from the tank and the vapors are probably safer in the tank than outside of it. This reduces the field for steaming to the few cases where there are small tanks containing an explosive mixture and where there is an adequate steam supply so that the tank can be heated to at least 170 degrees before there is danger of sparks being produced around the tank. In these cases there is still to consider the hazard of steam producing static electricity.

Under most conditions the danger of a spark from static produced by steam is not great, but if there is an insulated conductor in the tank such as a metal pail or a piece of wood containing nails floating on the oil on which a charge of static can accumulate, there is a serious danger of sparks. I mention a metal pail floating on oil because in more than one agitator fire a pail floating on the oil was regarded as the probable cause. We also believe that it is poor practice in cleaning tanks to introduce water streams into a tank being steamed.

From the foregoing, it is apparent that steam can seldom be depended upon to either prevent or extinguish tank fires and that under some conditions its use exaggerates the fire hazard. Another objection to steam smothering lines for tanks too large to be afforded protection is the danger that the steam line terminating in the vapor space of the tank can serve as a fuse to convey a fire from any place along the line right into the heart of the tank. The fire referred to at the beginning of this paper originated as a grass fire a few hundred feet away from the tank and was communicated to the tank through a steam smothering line.

Use of Water

Next let us consider the use of water in connection with tank explosions. Fire departments are usually instructed to keep water away from a tank on fire and to cool nearby tanks with water streams. It would appear that this is wrong on two counts. Water can often be used very advantageously to help extinguish oil fires and cooling exposed tanks with water may or may not be the safest thing to do. For example, cooling a lubricating oil, fuel oil, or kerosene tank with water streams may prevent the formation of an explosive mixture and thus be a decided safeguard. On the other hand, in the case of a gasoline tank, containing a mixture too rich to explode, the cooling of the tank would tend to suck in air which may produce an explosive mixture and thus actually increase the hazard. It might be argued that cooling the tank will tend to stop outbreathing and thus prevent a vent fire, but vent fires in tanks containing a rich mixture are not serious and a tank with vent burning is often safer from the explosive standpoint than if there were no vent fire. While on the subject, it can be said that a vent fire should seldom be extinguished until the vapor supply is controlled because vapor out of control is better burned at once than allowed to accumulate with possible subsequent ignition. At an oil well fire a few months ago in Southern California the fire fighters were wisely provided pilot lights around the fire for the purpose of quickly reigniting the vapor in case it should go out before it was under complete control.

PANHANDLE FIELDS

(Continued from Page 94)

No. 7 Kemp & Kempner, dry and abandoned; total depth 714 feet. No. 8 Kemp & Kempner, top pay 701 feet; initial production 30 bbls.; total depth 709 feet.

Young County

Baker & Omohundro's No. 1 Powell, dry and abandoned; total depth 1,365 feet. Bolin & Lindsey's No. 8 Wolf, top pay 868 feet; initial production 18 bbls.; total depth 882 feet. Combs' No. 1 Rogers, dry and abandoned; total depth 1,085 feet. Consolidated Oil Co.'s No. 1 Winkler, dry and abandoned; total depth 1,120 feet. Cooper & Hamilton's No. 2 Crain, dry and abandoned; total depth 1,006 feet. Fain & McGaha Oil Corp.'s No. 1 Thompson, dry and abandoned; total depth 812 feet. Harrison's No. 1 Hardy, dry and abandoned; total depth 700 feet. Hawkins & Holcombe's No. 1 Garvey and others, dry and abandoned; total depth 912 feet. Hill and others' No. 1 Dietrick, dry and abandoned; total depth 1,160 feet. Independent Oil & Gas Co.'s No. 7 Larimore, top pay 709 feet; initial production 10 bbls.; total depth 750 feet. No. 12 Larimore, top pay 695 feet; initial production 400 bbls.; total depth 709 feet. Julian Oil Corp. and Stripling's No. 7 Larimore, top pay 700 feet; initial production 150 bbls.; total depth 716 feet. No. 8 Larimore, top pay 696 feet; initial production 400 bbls.; total depth 709 feet. King Royalty Co. and Bullington's No. 3 Graham, top pay 684 feet; initial production 400 bbls.; total depth 712 feet. No. 4 Graham, top pay 690 feet; initial production 450 bbls.; total depth 712 feet. Kliner & Riggs' No. 1-A Larimore, dry and abandoned; total depth 792 feet. McLester Oil Co.'s No. 1 Burns, dry and abandoned; total depth 2,145 feet. Morris & Dunn's No. 1 Larimore, dry and abandoned; total depth 730 feet. Panhandle Refining Co.'s No. 3 Watons, top pay 663 feet; initial production 10 bbls.; total depth 669 feet. Paramount Oil Royalty Co.'s No. 3 Thomas, dry and abandoned; total depth 1,250 feet. Primrose Refining Co.'s No. 1 Kilpatrick,

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Sulco time-savers and life preservers in oilfield work include Kleen-A-Well (cleans tubing and rods); Solrite (boiler compound); Flameproofing (preservative for oilfield timbers); Fireproof powder (oilfield paint); Deflect-O-Lite (aluminum paint for steel tanks, etc.); Pipe Line Coating; Sulco Insulating Cement (for hot surfaces); Rustcotine (rust inhibitor); Liquid Packing; Permite (high temperature cement); Sealing Compounds for oil and water; and a multitude of other technical oilfield products.

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dry and abandoned; total depth 915 feet. Riggs' No. 13 Larimore and others, top pay 700 feet; initial production 250 bbls.; total depth 713 feet. Shriver's No. 1 Corley and others, dry and abandoned; total depth 980 feet. United Producers Co.'s No. 1 Larimore, top pay 695 feet; initial production 75 bbls.; total depth 707 feet. Williams' No. 1 Haygood, dry and abandoned; total depth 753 feet. Wise & Jackson's No. 1 Marshall, dry and abandoned; total depth 603 feet.

Baylor County

Fain & McGaha Oil Corp.'s No. 1 Portwood, dry and abandoned; total depth 1,420 feet. Turner and others' No. 1 Portwood, dry and abandoned; total depth 1,505 feet.

Erath County

Associated Producers Co.'s No. 1 Smith, temporarily abandoned; total depth 3,375 feet.

COMPLETIONS IN NORTH CENTRAL TEXAS

Week Ending July 26

ARCHER COUNTY

Baker's No. 1 Turbeville, top pay 1,400 feet, initial production 12 bbls., total depth 1,404 feet; No. 1-B Turbeville, top pay 1,397 feet, initial production 35 bbls., total depth 1,405 feet. Bridwell Oil Co.'s No. 7 Falls, top pay 1,353 feet, initial production 53 bbls., total depth 1,361 feet. Conoco's No. 3 Falls, top pay 1,129 feet, shot 100 quarts, initial production 75 bbls., total depth 1,146 feet. Flake and others' No. 1 Bell, dry and abandoned, total depth 1,434 feet. Golding-Cochran's No. 9 Brown, top pay 1,164 feet, initial production 30 bbls., total depth 1,177 feet; No. 3 Jeske, top pay 1,170 feet, initial production 20 bbls., total depth 1,177 feet. Golding-Cochran and others' No. 1 Winters and others, dry and abandoned, total depth 1,555 feet. Heydrick & Hickman's No. 2 Abercrombie & Taylor, dry and abandoned, total depth 1,800 feet. Maxson's No. 7 Green, top pay 1,114 feet, shot 60 quarts, initial production 40 bbls., total depth 1,131 feet. Pois & Schultz's No. 1 Green, top pay 1,128 feet, initial production 67 bbls., total depth 1,148 feet. Ray and Art's No. 1 Green, dry and abandoned, total depth 1,210 feet. Rickey Oil Co.'s No. 1 Hardgree, dry and abandoned, total depth 1,505 feet. Shappell Oil Co.'s No. 2 Kemp & Kempner, top pay 1,797 feet, initial production 35 bbls., total depth 1,799 feet. Trout and others' No. 1 Riggs, dry and abandoned, total depth 1,834 feet.

Cooke County

Fain & McGaha Oil Corp.'s No. 20, dry and abandoned, total depth 1,088 feet.

Jack County

Watchorn Oil & Gas Co.'s No. 1 Deck, dry and abandoned, total depth 2,145 feet.

COMPLETIONS IN RANGER DISTRICT

Week Ending July 26

Brown County

Bonwell and others' No. 1 Cobler, dry and abandoned, total depth 1,785 feet. Bush & Roberts' No. 2 Richardson, temporarily abandoned, total depth 650 feet. L. C. Geisendorf's No. 2 Wise, temporarily abandoned, total depth 565 feet. Paramount Oil & Refining Co. and Coper and others' No. 1 McDonald, temporarily abandoned, total depth 1,180 feet. E. L. Smith Oil Co.'s No. 1 Pugh estate, dry and abandoned, total depth 1,306 feet.

Callahan County

Guff and others' No. 1 George, dry and abandoned, total depth 1,100 feet. John Kleiner's No. 1 Seale, dry and abandoned, total depth 758 feet. Star Drilling Co.'s No. 2-B Finley, top pay 885 feet, initial production 416,000 feet of gas, total depth 918 feet.

Comanche County

Anderson and others' No. 1 Plumly, dry and abandoned, total depth 3,220 feet.

Haskell County

Roeser & Pendleton's No. 1 Reynolds Cattle Co., dry and abandoned, total depth 2,155 feet.

Eastland County

Amyx and others' No. 1-B Conwellee, dry and abandoned, total depth 1,510 feet. Lone Star Gas Co.'s No. 6 Grove, Lake sand 3,560 feet, initial production 35,200,000 feet of gas, total depth 3,572 feet.

Palo Pinto County

Richardson and others' No. 1 Storm, dry and abandoned, total depth 1,799 feet. Texas Pacific Coal & Oil Co.'s No. 1 fee, dry and abandoned, total depth 3,200 feet.

Shackelford County

Sedwick & Webb's No. 1 Jeter, top pay 931 feet, shot 10 quarts 929-34 feet, initial production 12 bbls., total depth 980 feet.

Stephens County

Hickok Producing & Drilling Co.'s No. 1 Paschal, shot 130 quarts 3,045-3,112 feet, 30,000 feet of gas and 3 bbls. of oil per day from 3,088-91 feet, total depth 3,125 feet.

Throckmorton County

Junker & Perkins' No. 1 Marcell, dry and abandoned, total depth 1,502 feet. Sutz and others' No. 1 Kelly, dry and abandoned, total depth 1,002 feet.

COMPLETIONS IN PANHANDLE

Week Ending July 26

Carson County

Dixie Oil Co.'s (McMan Oil & Gas Co.) No. 3 Noel, total depth 3,253 feet, plugged back to 3,231 feet, show oil 3,090-3,106 feet; initial production 75 bbls.

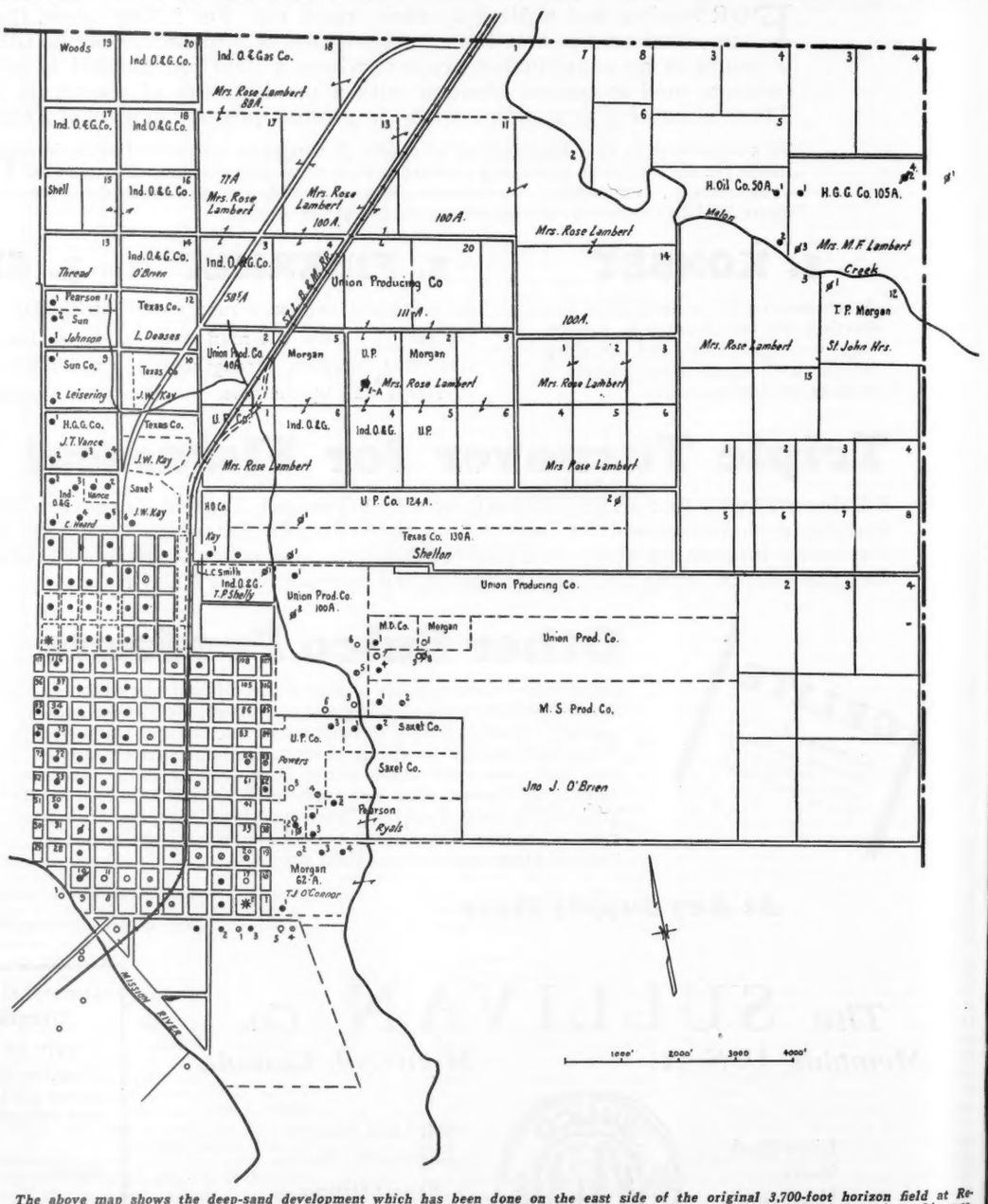
Childress County

Continental Oil Co. and Sun Oil Co.'s No. 1 T. L. Johnson, dry and abandoned; total depth 3,830 feet.

Gray County

Lefors Petroleum Co.'s No. 3 Davis-Shaw, total depth 2,380 feet; initial production 17,500,000 feet of gas from 1,990-2,380 feet. Dixon Creek Oil Co.'s No. 3 Harrah, top pay 3,170 feet; initial production 250 bbls.; total depth 3,230 feet. Magnolia Petroleum Co.'s No. 9 Faulkner, top pay 2,825-40 feet, second pay 2,890-2,910 feet; show oil 2,786-96 feet; initial production 795 bbls. with 8,000,000 feet of gas; total depth 2,910 feet. No. 1 Saunders, top pay 2,928-44 feet and 2,980-85 feet; shot 220 quarts 2,920-3,007 feet; initial production 620 bbls.; total depth 3,015 feet. Shamrock Oil & Gas Co.'s No. 1 Worley & Reynolds, top pay 2,952-67 feet and 2,973 feet; initial production 510 bbls.; total depth 2,984 feet. McIlroy Oil Co.'s No. 4 Archer, top pay 3,200 feet; shot 160 quarts 3,160-3,230 feet; initial production 275 bbls.; total depth 3,240 feet. The Texas Company's No. 8 Combs & Worley, show gas 2,760-65 feet; show oil 2,782-83 feet; top pay 2,798-2,810 feet; initial production 185 bbls.; total depth 2,911 feet. No. 1 Harrah, total depth 3,250 feet; plugged back to 3,240 feet; top pay 3,140-45 feet and 3,160-65 and 3,175-80 feet; shot 160 quarts from 3,154-3,235 feet; initial production 450 bbls. No. 5

EASTERN SIDE OF REFUGIO FIELD HAS SEEN EXTENSIVE DEEP-SAND DEVELOPMENT



The above map shows the deep-sand development which has been done on the east side of the original 3,700-foot horizon field at Refugio. With the exception of Union Producing Co.'s No. 1 O'Brien, the discovery well, all this development has taken place this year. The development shown at the left-hand side of the map up through the west tier of town lots, is the eastern edge of the 3,700-foot field. Along the eastern edge of the townlot area is shown the 5,400-5,500-foot horizon field. At the extreme northeast corner is shown the development in the 5,900-foot horizon. The third producing horizon found, that below 6,400 feet, has been found productive only in two wells, Union Producing Co.'s No. 1-A Rose Lambert, Block 1, north of the 5,500-foot development, and in Mission Drilling Co.'s No. 1 Moss, located in Block 110 of the townlots. A 5,600-foot well, Independent Oil & Gas Co.'s No. 1 Helen Reilly, in the heart of the original gas-producing field in the center of the flanking 3,700-foot field, is not shown on this map, being to the west. A deep dry hole, Morgan Oil Corp.'s No. 1 Power, located to the extreme south of the Refugio area, also is not shown, as is not a deep test being drilled by Houston Oil Co. (No. 1 O'Connor), located further east of the area taken in by the map.

Wright, top pay 2,720 feet and 2,735-75 feet; initial production 1,755 bbls. first 24 hours with 6,000,000 feet of gas and 400 bbls. of water; total depth 2,-810 feet.

Hutchinson County

Danciger Oil & Refining Co.'s No. 1 Cheatham, top pay 3,063 feet; initial production 485 bbls.; total depth 3,067 feet. Skiatex Oil Co.'s No. 9 Kingsland, top pay 2,860-95 feet; shot 500 quarts 2,850-2,959 feet; initial production 250 bbls.; total depth 2,959 feet. Phillips Petroleum Co.'s No. 1 Johnson (Rudy), total depth 3,346 feet; plugged back to 2,897 feet; initial production 10,000,000 feet of gas from 2,100-2,897 feet.

Wheeler County

Lone Star Gas Co.'s No. 4 Edwards & Trostle, initial production 28,000,000 feet of gas from 1,833-1,958 feet; total depth 1.958 feet. Murchison & Fain's No. 19 Close, initial production 19,000,000 feet of gas from 1,645-60 feet; total depth 1,660 feet. No. 1 Magnolia fee, initial production 17,000,000 feet of gas from 1,613-83 feet; total depth 1,690 feet.

SCARCITY OF WATER CONTINUES TO BE DRILLING PROBLEM IN VAN POOL

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 28.—Scarcity of water for drilling purposes continues to create a production problem in the Van Pool, Van Zandt County, but the Pure Oil Co. has laid 5 miles of 12-inch line from the pool to a water supply on the Jones farm, southeast of Van, and will pipe water to the field through this conduit. A smaller water line is being laid by the same company from the main part of the field to the extension are to the northeast, which was lately opened up by the completion of Humble Oil & Refining Co.'s No. 1 Carroll in the William Daniel Survey.

The Imperator Oil Co.'s No. 2 Carter, an east offset of the Humble well, on a vacancy strip lying along the west side of the Carter farm, has only a derrick up, for the company is being restrained from drilling this location. The Texas Company's No. 1 Carter, an east offset to the Imperator location, and the Humble well, topped the Austin chalk this week at 2,530-2,723 feet, the Woodbine sand at 2,805 feet and is shut down at 2,806 feet. It previously topped the Pecan Gap chalk from 1,535-1,690 feet. This will be a short eastern extension and is practically sure of making a well.

The Pure Oil Co.'s No. 1 McMahon in the northwest corner of the M. L. McMahon 48-acre farm, is a south offset to the above test of The Texas Company on the Carter farm, and is rigging up to start drilling.

To the southwest of this area, about 3,000 feet, in the direction of the Van Pool proper, the Pure Oil Co. and Humble Oil & Refining Co. have made tentative locations for tests on the Ella York and Ruth Star Blake lands, respectively.

Humble Gets Dry Hole

Humble Oil & Refining Co.'s No. 1 Freeman, in the northwest corner of the Freeman 20-acre tract in the John Walling Survey has been abandoned as a dry hole at 3,505 feet, the first for the pool, and defining the pool on the east. It is a little over 1¼ miles to the east of the discovery well, and about 1,125 feet east of the nearest producer, on the Mrs. C. White farm.

Pure Oil Co.'s No. 1 Crim in the A. Crim 48.5-acre farm, approximately 1 mile northwest of the discovery well, is another test which is practically sure of defining the pool in this direction for it is now coring at 3,486 feet and is dry at this depth, assuring the pool of its second dry hole, on the opposite side of the field to the Humble dry hole.

Imperator Oil Co.'s No. 1 G. J. Luther, located in the southwest corner of the Luther 32-acre tract on which the Humble Oil & Refining Co. has the lease, is now drilling ahead at 1,680 feet after trying to produce the test from the Nacatosh sand. Top of the sand was logged at 1,138 feet, and the hole bottomed at 1,155 feet for the production test. This test is on a 3.01-acre strip off of the west side of the Luther farm. A Woodbine sand test will now be made of it, and due to the fact that it is over a mile north of production in the Van Pool, and the first test in this direction, it will be extremely interesting, for it will mean an extension if it proves a producer, and will open up another area outside of No. 1 Unit Plan, proving up more acreage for the Humble Oil & Refining Co. and the Pure Oil Co. and Sun Oil Co., all of which own offset acreage to the Imperator test.

Rigging Up for Test

To the south of the pool, Kraft and Kelsey are rigging up on their location on the small strip to which they have title for drilling. This strip lies along the eastern side of the Sam Allen and others' 30.6-acre, and Wylie Enas 30.6-acre farms in the J. Prado Survey, Abstract No. 647. It will be an interesting test in this direction from the pool, and will mean about a 3,000-foot extension to production if the Woodbine sand is fruitful to this extent. The Pure Oil Co. has all the offset acreage to this test, and will be forced to drill about five offsets in case the well is a commercial producer.

McElreath and Suggett and the Rowan Drilling Co.'s No. 1 Gilliam heirs in the J. C. Robertson Survey, Smith County, approximately 7 miles southeast of the Van Pool, located in one of the best looking areas of this district, has been put down 2,455 feet in nine days' drilling time, spudding the afternoon of July 18. The test is now shut down at this depth.

No new locations were reported for the Van Field this week, the areas to the north and northeast getting most of the attention in this vicinity, but as soon as plenty of water is assured the field, drilling will no doubt advance unabated. The Pure Oil Co. has laid out a system of well constructed roads, 50 feet wide, throughout the Van Field to expedite activities and cut down hauling costs, and the new railroad into Van is doing an increasing business in hauling in production equipment.

Pure Oil Co.'s No. 1 Jarman, the discovery well of the Van Pool, is due to be deepened, and has been rigged up for this work. Total depth is now 2,710 feet where it was completed in October, 1929.

Production

Daily average production of the pools of East Central Texas last week follows:

Boggy Creek	3,690
Cedar Creek	60
Currie	275
Hill County	35
Mexia	4,320
Minerva	562
Nigger Creek	210
Powell	5,678
Richland	185
Thrall	40
Van	24,339
Wortham	870
Total East Central Texas	40,264
Week ending July 19	40,037
Increase	227

COMPLETIONS IN EAST CENTRAL TEXAS

Week Ending July 26

Van Zandt County

Humble Oil & Refining Co.'s No. 1 J. A. Freeman, dry and abandoned, total depth 3,505. Pure Oil Co.'s No. 1 M. E. Church lot, initial production 208 bbls., total depth 2,929 feet; No. 7 Thompson, initial production 600 bbls., total depth 2,929 feet.

Limestone County

Flannigan's No. 1 Presnell, dry and abandoned, total depth 3,292 feet.

Shelby County

Loving Oil Co.'s (Benedum & Trees) No. 1 McAnn, dry and abandoned, total depth 5,520 feet.

Navarro County

Bateman and others' No. 1 McGowan, dry and abandoned, total depth 3,248 feet. Wheelock & Collins' No. 1 Costles, dry and abandoned, total depth 3,235 feet.

MORE CURTAILMENT

WARREN, Pa., July 28.—Oil producers of Forest, Elk, Tioga and Potter Counties met here and voted to cut production 30 per cent until September 1 to assist in alleviating overproduction. Two hundred oil men were at the day's session, which was addressed by Forest Dorn and William Sloan, both of Bradford.

MAKES HIS CALLS BY PLANE

The Halliburton Oil Well Cementing Co., Duncan, Okla., has provided an airplane for Jay Taylor, in charge of the Amarillo, Tex., division of the company, and Mr. Taylor now is making his business trips in the ship, a three-passenger Stearman, powered with a J-5 225-horsepower Wright Whirlwind motor.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 92)

C. C. Duffey's No. 1-C Cowden Bros. & Co., 2,640 ft. from S and 3,960 ft. from W of Juan Cordona Sur. ... Rigging up.
Sun Oil Co.'s No. 1 First National Bank, C Sec. 6, J. H. Gibson Sur. ... Drlg. 2,375 ft.

CROCKETT COUNTY

Dixie Oil Co. and Amerada's No. 2 Powell, 258 ft. N. and 2,349 ft. W of NE cor. of Sec. 42, T.C. Ry., but located in Sec. 52, Blk. BB ... Location.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur. ... Spudded and shut down.
Magnolia Pet. Co.'s No. 1 Hoover, 2,310 ft. from N and 330 ft. from E of Sec. 12, Blk. 1, G.C.&S.F.R.R. Sur. ... Drlg. 5,605 ft.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, D.&B. Sur. ... Rig up.
G. Schaul's No. 1 Bouscour Est., 330 ft. N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur. ... Rig up and shut down.

CULBERTSON COUNTY

Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E. Sec. 20, Blk. 89, Public School Land ... Shut down 975 ft.
Kornrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land ... Cleaning out 850 ft.

ECTOR COUNTY

C. P. Davis et al's No. 1 Hendricks, C SW, Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. ... Shut down 4,012 ft.
Humble Oil & Ref. Co.'s No. 1 Jones, 330 ft. from S and 423 ft. from W of Sec. 6, Blk. 44, T.&P. Sur. ... Drlg. 845 ft.
Independent Oil & Gas Co.'s No. 1 Eidson, 1,250 ft. S and 2,144 ft. E of NW cor., Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ... Shut down 3,800 ft.; 1,100 ft. oil in hole.
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M.M.Br.&A. Sur. ... Shut down 2,375 ft.
T. P. Coal & Oil Co.'s No. 1 McKenzie, 1,650 ft. from S and 330 ft. from E of Sec. 282, Blk. 45, Twp. 2s, T.&P. Sur. ... Shut down 3,870 ft.; swabbing dry.
R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor., Sec. 27, Blk. 44, T.&P.R.R. Sur. ... Shut down 4,002 ft.
Simms Oil Co.'s No. 3 University, 2,310 ft. from N and 330 ft. from W of Sec. 1, Blk. 35 ... Shut down 3,250 ft.
Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ... Shut down 3,750 ft.; flowed 110 bbls. on the 12th; shut in for storage.
Skelly Oil Co. et al's No. 1-C University, 2,310 ft. from N and W of Sec. 2, Blk. 35 ... Shut down 700 ft.
Sunray Oil Co. et al's No. 1 Jones, 2,330 ft. from N and 440 ft. from E of Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ... Plugged back to 3,812 ft.; well now dead.
The Texas Co. et al's No. 8 Connell, 330 ft. from S and 440 ft. from E of Sec. 2, Blk. B-16 ... Drlg. 3,350 ft.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. ... Shut down 3,089 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 2 Barrett, 330 ft. from N and W of NE, Sec. 199, B.B.B.&C. Sur. ... Mudding 8¼-in. casing 2,645 ft.
Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Sec. 200, B.B.B.&C.R.R. Sur. ... Drlg. 2,435 ft.
Mid-West's No. 1 Decker, 330 ft. from S and W of W 80 ac. of N 160, Sec. 8, Richardson Sur. ... Pipe parted 2,880 ft.
Roeser & Pendleton's No. 1 Steele, 660 ft. from N and 440 ft. from W of N half of SW, Sec. 210, B.B.B.&C. Sur. ... Show gas 1,845-65 ft.; drlg. 2,810 ft.
The Texas Company's No. 1-A Teagarden, 150 ft. from S and 420 ft. from E of Sec. 8, Richardson Sur. ... Drlg. 2,835 ft.

GAINES COUNTY

Humble Oil & Ref. Co.'s No. 1 Carswell, 660 ft. S and E of NW cor. of Sec. 23, Blk. A-27, Public School Land ... Show oil 4,150-70 ft.; drlg. 4,410 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 6, H.&.G.N. Sur. ... Spudded and shut down.
Richard's No. 1 Stoker, 330 ft. from N and W, Sec. 2, Blk. 2, G.H.&H. Sur. ... Top lime 2,366 ft.; shut down 3,035 ft.

GLASSCOCK COUNTY

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.P. Sur. ... Total depth 2,956 ft.; fishing casing.
World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 3s, T.&P. Sur. ... Shut down 660 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ... Sulphur water 1,433-46 ft.; shut down 1,456 ft.
Greene O. & R. Co. et al's No. 1 Drumon, 330 ft. from N and W of E half of NE Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ... Location.
Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ... Drlg. 2,845 ft.
Moody O'l Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ... Shut down 261 ft.

HUDSPETH COUNTY

Rio Bravo Oil Co.'s No. 1 Southern Pacific right of way, 1,800 ft. N and 1,000 ft. E of Sec. 16, Blk. 72, Twp. 7, T.&P. Sur. ... Completed as water well.
California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E ... Total depth 4,848 ft.; plugged back to 4,590 ft.; to test show oil at 4,100 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ... Fishing 3,155 ft.
Williams & Williams Drlg. Co.'s No. 1 Noelke, 200 ft. from N and 1,020 ft. from E of Sec. 8, City of San Antonio Sur. ... Machine.

FRANCIS, BRO. & CO.

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IRION COUNTY

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 ..... Shut down 1,105 ft.
Cromwell et al's No. 1 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,230, G.C.&S.F. Sur.. Fishing for tools 940 ft.
Cromwell et al's No. 2 Tankersley, 200 ft. from N and 150 ft. from W of Sec. 1,219, T.C.R.R. Sur. ..... Shut down 1,552 ft.
Straughn & Texannati Oil Co.'s No. 3 Nutt, 804 ft. from N and 150 ft. from W of NE cor. of NW, Blk. 6, Gonzales Co. School Land ..... Drlg. 515 ft.
P. E. Williams' No. 1 Ash, C of Sec. 20, Washington County ..... Show oil 7,931 ft.; shut down 8,890 ft.; may drill deeper.
Webb et al's No. 1 Nutt, 150 ft. from S and 116 ft. from W of Blk. 5, Gonzales Co. School Land ..... Location.

JONES COUNTY

Gibson & Johnson's No. 1 Hudspeth, 1,125 ft. from N and 483 ft. from E of Sec. 22, Edward Miles Sur. .... Shut down 2,565 ft.; 600 ft. oil and water in hole; top pay 2,542 ft.
Pope et al's No. 1 Swann, 2,023 ft. from S and 400 ft. from E of I. Miley Sur. No. 281 ..... Location.
Shabeen et al's No. 1 King, 6,750 ft. from N and 150 ft. from E of M. Bueno Sur. No. 197 ..... Drlg. 1,980 ft.

KENT COUNTY

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H, H.&T.B. Sur.. Shut down 273 ft.

LAMB COUNTY

Graham Oil & Gas Co.'s No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Shut down 4,428 ft.

LOVING COUNTY

Dixie and Phillips Pet.'s No. 1 Johnson, 1,320 ft. from N and E of Sec. 38, Blk. 54, Twp. 2s, T.&P. Sur. ..... Shut down 4,142 ft.
Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. ..... Spudding.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 3,383 ft.
Hadlock et al's No. 2 Russell, 1,650 ft. SW of NE line, 2,310 ft. NW of SE line, Sec. 80, Blk. 1, W.&N.W. R.R. Sur. ..... Drlg. 4,250 ft.; top black lime 4,227 ft.
Henshaw et al's No. 1 Reagan & McElvain, 990 ft. from SE and 330 ft. from SW, Sec. 84, Blk. 1, W.&N.W. Sur. ..... Cellar.
Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ..... Spudded 140 ft.; shut down.
Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur.. Rigged up and shut down.
Lockhart's No. 2 Wheat & Ramsey, 440 ft. from NE and 880 ft. from NW, Sec. 83, Blk. 1, W.&N.W. Sur.. Drlg. 2,145 ft.
Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. ..... Total depth 700 ft.; running 10-in. casing.
Rush et al's No. 1 Wheat, 1,650 ft. from NW and 330 ft. from SW of Sec. 85, Blk. 1, W.&N.W. Sur. ..... Shut down 690 ft.
California Co.'s No. 2 Reagan & McElvain, 440 ft. from NW and SW, Sec. 84, Blk. 1, W.&N.W. Sur. ..... Drlg. 1,670 ft.; top salt 735 ft.
California Co.'s No. 4 Reagan & McElvain, 330 ft. from NE and 1,650 ft. from NW, Sec. 84, Blk. 1, W.&N.W.. Drlg. 150 ft.
Lee O. White et al's No. 1 Russell et al, 320 ft. from NW and 2,200 ft. from SW, Sec. 80, Blk. 1, W.&N.W.. Drlg. 410 ft.

LYNN COUNTY

George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. ..... Shut down 5,175 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 300 ft. from S and W, Sec. 1, B.S.&F. Sur. ..... Show oil 709-11 ft.; drlg. 1,030 ft.
Panhandle Ref. Co.'s No. 2 Eckhart, 1,320 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. ..... Total depth 2,977 ft.; 500,000 ft. gas with show oil 2,945 ft.
Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ..... Fishing tools 2,415 ft.

MITCHELL COUNTY

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. ..... Total depth 3,112 ft.; top pay 3,038 ft.; 1,000 ft. oil in hole; swabbing 40 bbls. in 24 hrs.
Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W parallel to section lines of NE cor., Sec. 8, Blk. 27, T.&P. Sur. ..... Spudded 10 ft. and shut down.

PECOS COUNTY

Barnes et al's No. 1 Sanford, 160 ft. from NW and 157 ft. from SW of Sec. 55, Blk. 10, H.&G.N. Sur. ..... Drlg. 380 ft.
Black et al's No. 1 Pecos Valley Oil Co., 1,120 ft. from SE and 1,420 ft. from SW, Sec. 34, Blk. 3, H.&T.C. Sur. ..... Shut down 1,215 ft.
Buell & Hagan et al's No. 1-A Pecos Valley Oil Co., 150 ft. from NW and 1,470 ft. from NE of Sec. 22, Blk. 10, H.&G.N. Sur. ..... Show oil 1,580 ft.; spraying estimated 3 bbls. per day; total depth 1,623 ft.
Galt Brown's No. 1 Neville, 2,265 ft. from E and 764 ft. from S. Sec. 74, Blk. 194, G.C.&S.F. ..... Drlg. 1,583 ft.
Hayes et al's No. 1 Lea, C NW of NE, Sec. 9, Blk. 106, T.&St.L. Sur. ..... Location.
G. A. Henshaw, Jr., Inc.'s No. 1 University, 1,650 ft. from S and 990 ft. from E. Sec. 32, Blk. 16 ..... Drlg. 350 ft.
Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ..... Drlg. 2,102 ft.
Humble Oil & Ref. Co.'s No. 1 Thompson, 1,980 ft. N and E of Sec. 96, G.C.&S.F. Sur. ..... Drlg. 422 ft.
Hussman Oil Co.'s No. 1 Esters, 960 ft. from N and 300 ft. E, Sec. 83, Blk. OW, T.M.R.R. Sur. ..... Shut down; show oil 1,500-65 ft.; total depth 1,680 ft.
Independent O. & G. Co.'s No. 4 McDonald, 155 ft. from N and 2,485 ft. from E, Sec. 46, Blk. 12, H.&G.N..... Drlg. 1,435 ft.
Magnolia Pet. Co.'s No. 1 Byrne, 2,490 ft. from SE and SW, Sec. 54, Blk. 10, H.&G.N. Sur. ..... Rig up.
McCarty Oil Co.'s No. 2 Gray, 2,370 ft. from N and 450
McCurdy & Brown's No. 1 Tippett, 1,150 ft. from S and 150 ft. from W of SE, Sec. 40, Blk. 197, G.C. &S.F. Sur. ..... Rig up.
McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Location.
Messenger et al's No. 2 Byrne, 2,490 ft. from NE and SE of Sec. 54, Blk. 10, H.&G.N. Sur. ..... Shut down 1,367 ft.; top pay 1,364 ft.; flowing 93 bbls. daily.
Messenger et al's No. 1 Butz, 1,830 ft. from NW and 1,170 ft. from SW Sec. 54, Blk. 10, H.&G.N. Sur. ... Shut down 740 ft.
J. R. Miller et al's No. 1 Bennett, 359 ft. W from CWL, Sec. 1, Blk. 119, G.C.&S.F. Sur. ..... Shut down 1,700 ft.
J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. Sur. ..... Total depth 1,230 ft.; top pay 1,089 ft.; plugged back to 1,185 ft.; will drill deeper.
J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. ..... Underreaming 2,200 ft.
Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. ..... Shut down 1,953 ft.
Peren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. ..... Shut down 1,323 ft.
Perren's No. 1 Jackson, 200 ft. from NW and SW of Sec. 28, Blk. 3, H.&T.C. Sur. ..... Shut down 1,399 ft.; show oil 1,355 ft.
Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W Sec. 13, Blk. 194, G.C.&S.F. ..... Drlg. 1,025 ft.

Plymouth Oil Co.'s No. 4 Perry, 300 ft. from N and 420 ft. from E, Sec. 14, Blk. 194, G.C.&S.F. Sur. ..... Cellar.
R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C.R.R. Sur. ..... Spudded and shut down.
Phillips Pet. Co.'s No. 3 Monroe, 3,860 ft. from N and 1,255 ft. from E, Sec. 39, Blk. 194, G.C.&S.F. ..... Top pay 1,358 ft.; flowing 10 bbls. per day; total depth 1,538 ft.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ..... Drlg. 1,068 ft.
Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Shut down 90 ft.
Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. ..... Shut down 2,070 ft.
California Co.'s No. 1 Fromme, 330 ft. from NE and NW Sec. 106, Blk. 10, H.&G.N. Sur. ..... Show gas 1,365 ft.; show oil 1,390 ft.; total depth 1,615 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW of Sec. 31, Blk. 34, H.&T.C. Sur. ..... Location.
The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&St.L. Sur. ..... Shut down 3,504 ft.
W. F. Walsh et al's No. 1 Scharbaur Cattle Co., 330 ft. S and 990 ft. E from C, Sec. 16, Blk. 136, T.&St.L. R.R. Sur. ..... Shut down 2,887 ft.
Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. .... Location.
Webb's No. 3 fee, 1,900 ft. from W and 223 ft. from S, Sec. 105, Blk. OW, G.C.&S.F. Sur. ..... Shut down 441 ft.; show gas at 410 ft.

PRESIDO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N and 1,188 ft. from E lines of Sec. 245, Blk. 4 ..... Shut down 2,630 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land.. Flowing 1,000 bbls.; total depth 8,668 ft.

Beesley et al's No. 1 Sawyer Cattle Co., 1,320 ft. from N and 3,960 ft. from E, Sec. 8, J. G. Robinson Sur., elevation 2,586 ft. ..... Shut down 2,820 ft.
Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ..... Top pay 8,220 ft.; total depth 8,220 ft.; well killed.

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 250 ft. from W of Sec. 25, Blk. 9 ..... Shut down 2,400 ft.
Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W, Sec. 36, Blk. 9 ..... Total depth 8,633 ft.; flowed 1,858 bbls. 24 hrs.; flowed 1,070 bbls.

REEVES COUNTY

E. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.
Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 50 ..... Shut down 1,860 ft.; show oil 1,820 ft.; cleaning out after two shots; filled up 200 ft. with oil.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from E of Sec. 7, Blk. 5, H.&G.N. ..... Shut down 260 ft.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur... Show oil 3,410 ft.; drlg. 3,840 ft.
California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ..... Drlg. 2,820 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Show oil 2,303-95 ft.; gas pocket 2,303 ft.

Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. ..... Derrick.
George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 ..... Show oil 2,028 ft.; shut down 2,643 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW, Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. ..... Shut down 4,060 ft.
Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ..... Shut down 6,861 ft.; bailing from 5 to 10 bbls. of 50 gravity oil every 3 to 5 hrs.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A.R.R. Sur. ..... Shut down 2,395 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C.R.R. Sur. ..... Shut down 750 ft.
Westyde et al's No. 1 Meador, 1,320 ft. from S and E of Sec. 661, G.C.&S.F. Sur. ..... Location.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. ..... Fishing 4,912 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ..... 2,000 ft. oil in hole; total depth 3,320 ft.; fishing bit; top pay 1,750 ft.; swabbed 106 bbls. in 5 hrs.; filled up 600 ft. in 20 hrs. after swabbing.

Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. ..... Shut down 4,373 ft.
Camp Springs Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N... Shut down 471 ft.
I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. ..... Spudded and shut down.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Drlg. 4,712 ft.
Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ..... Drlg. 3,125 ft.

STERLING COUNTY

Mann et al's No. 1 Reed, 330 ft. from N and 2,310 ft. from W, Sec. 16, Blk. 14, S.P.R.R. ..... Drlg. 1,815 ft.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ..... Location.

TAYLOR COUNTY

Clark et al's No. 1 Kendall, 250 ft. from N and W of farm in Willis Avery Sur. ..... Shut down 1,310 ft.
Eastland Oil Co.'s No. 1 Hunter, 1,574 ft. from E and 3,418 ft. from S of William R. Ellis Sur. ..... Spudding.
Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-acre tract, Sec. 31, Guadalupe County School Land ..... Drlg. 2,375 ft.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land ..... Show oil 4,917 ft.; shut down 6,001 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE, Sec. 10, Blk. A, S.P.R.R. Sur. ..... Shut down 1,080 ft.
Sanger et al's No. 1 City of Abilene, 830 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Lands .... Location.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Shut down 2,180 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C, Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.
Miller Bros.' No. 1 Allison & Burke, C NW cor., Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.
Mrs. J. B. McPhees' No. 1 Sam Belt, C, Sec. 17, Blk. D-7, E.L.R.R. Sur. ..... Shut down 880 ft.; moved off machine.

Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. ..... Shut down 5,200 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 640 ft.

Miller SAND PUMP

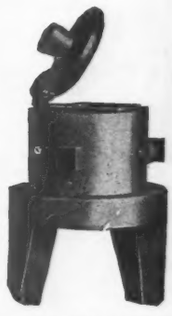
With a *type bottom* to meet every requirement

YOU can equip your Miller Sand Pump with a type bottom to exactly fit your present requirements and then quickly change to any of the four type bottoms that meet the working conditions of every well.

Only in the Miller do you get the exclusive construction by which the wire line connects directly to the plunger permitting use of a 25 or 30 foot tube eliminating use of a rod, the sand pump that is the field man's choice. Constructed of National Seamless tubing and Sivyer Steel Castings. It is made to stand abuse. All steel throughout, eliminating use of leather washers.

Furnished with various type bottoms, illustrated to meet any condition. Made in 2½, 3, 3½, 4, 4½, 5, 5½, 7 and 9-inch diameters and 20, 25 and 30-foot lengths. Send for circulars and price list. The Miller Sand Pump is sold by leading supply stores everywhere.

Chisel Bottom
will save the expense of running tools and its chisel shape prevents sticking in tightly packed sands.



Sand Pump
Bottom illustrated in position in the pump.

Bailer Bottom
will speed up production in cavy holes by time saved in picking up cuttings.

Patented
March 1, 1921—No. 1370340
January 20, 1925—No. 1523604

Star Bottom
used for cutting the sand loose and preferred by some to the Chisel Bottom.

MILLER
Sand Pump Company

(Formerly known as the Miller Combination Bailer & Pump Co.)

General Offices and Plant
SAPULPA, OKLA., U.S.A.

TERRY COUNTY

Atlantic et al's No. 1 Carlisle, 990 ft. from S and E of Sec. 58, Blk. E, E.L.&R.R. Sur. ..... Drlg. 4,945 ft.

TOM GREEN COUNTY

Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, H.T.C.R.R. Sur. ..... Location.

Ellis' No. 3 Lewis, 1,350 ft. S and 450 ft. E of SW cor. Jas. Webb Sur. 77, 1ut in Albert Black Sur. 75 ..... Shut down 1,101 ft.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW, Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.

Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P.R.R. Sur. ..... Shut down 422 ft.

Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Fishing for tools 3,275 ft.

E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N, Sec. 6, Blind Asylum Land ..... Show oil 418-20 ft.; total depth 632 ft.

UPTON COUNTY

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T.R.R. Sur. ..... Location.

Eppenauer Drlg. Co.'s No. 3 Chaney, 1,147 ft. from N and 990 ft. from W, Sec. 18, Blk. 3, M.-K.-T. Sur. ... Junked and abandoned; total depth 2,475 ft.; to run 2-in. tubing and test.

VAL VERDE COUNTY

A. Bluhm's No. 1 Yoast, 1,760 ft. N, 600 ft. W of SE cor., Sec. 31, Blk. 3, I.&G.N. Sur. ..... Location.

Independent Operators' No. 1 Whitehead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.

O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Cleaning out 5,940 ft.

Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L.&R.R. Sur... Show oil 1,525 ft.; fishing 3,035 ft.

Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 45 Blk Y.. Shut down 4,009 ft.

WARD COUNTY

Bradford et al's No. 1 Murry, 1,782 ft. from NW and 2,157 ft. from SW, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 150 ft.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 5, H.&T.C. Sur... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.

R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C.R.R. Sur. ..... Shut down 600 ft.

Penn and Atlantic's No. 1-B Pecos Mercantile Co., 990 ft. from NW and 2,310 ft. from NE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,030 ft.

Richardson et al's No. 4 C'Brien et al, 330 ft. from N and 2,340 ft. from W, Sec. 5, Blk. F, G.M.M.B.&A. .. Location.

Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ..... Shut down 5,077 ft.; show oil 5,070 ft.; shot 140 qts. from 5,047-77 ft.; no results.

Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17, is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.

Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Drlg. 1,740 ft.

J. E. Smith's No. 1 Clement, 152 ft. SW of NE line and 153 ft. SE of NW line, Lot 7, Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ..... Shut down 2,230 ft.; estimated 1,000,000 ft. gas; flowed 8 bbls. oil and 20 bbls. water per day.

WINKLER COUNTY

Atlantic & Maxwell's No. 1 Daugherty, 1,650 ft. from S and 2,310 ft. from E, Sec. 16, Blk. 74, Public School Land ..... Shut down 400 ft.; set 15½-in. casing.

A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,120 ft.

Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Drlg. 4,078 ft.

Shell and The Texas Company's No. 1-B Cowden, 600 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ..... Had oil show 2,585 ft.; coring 3,160 ft.

Simms Oil Co.'s No. 1 Sealy, C of SE, Sec. 49, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 1,620 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 94)

CHILDRESS COUNTY

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Shoupe Bros.' No. 1 Aldus, 410 ft. N, 330 ft. E, Sec. 96, Blk. 16, H.&G.N.R.R. Sur. ..... Show oil and gas 1,678 ft; T.D. 3,046 ft; crooked hole.

Shoupe Bros.' No. 1 Whitson, 330 ft. N and E, SW, Sec. 33, Blk. 12, H.&G.N.R.R. Sur. ..... Rig.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 985 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur. ..... T.D. 3,006 ft; contract depth.

Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... S.D. 4,025 ft.

GRAY COUNTY

Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.& G.N. Sur. ..... S.D. 1,200 ft.

Cockrell-McIlroy Oil Co.'s No. 1 Baer, 330 ft. S and W, NE. Sec. 126, Blk. 3, I.&G.N. Sur. ..... S.D. 670 ft.

Cockrell-McIlroy O'l Co.'s No. 1 Allam, 330 ft. N and E of E½ NE, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,655 ft.

Cockrell-McIlroy's No. 1 Horner, 330 ft. S and E, NE, Sec. 139, Blk. 3, I.&G.N. Sur. ..... S.D. 2,575 ft.

Cockrell-McIlroy Oil Co.'s No. 1 Jackson, 330 ft. N and E of E 110 ac., SE, Sec. 138, Blk. 3, I.&G.N. Sur..... Rig.

Continental Oil Co.'s No. 1 Wright, 330 ft. S and W, NW, Sec. 13, Blk. 3, I.&G.N. Sur. ..... Drlg. out plug 2,626 ft.

Continental Oil Co.'s Combs & Worley, 330 ft. S and E, NE, Sec. 38, Blk. 3, I.&G.N. Sur. ..... Drlg. 570 ft.

Danciger O. & R. Co.'s No. 2 Bradford, C SW NE, Sec. 148, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,200 ft.

Danciger O. & R. Co.'s No. 1 Catlin et al, 175 ft. S, 300 ft. E of N 71 ac. of E 231 ac., Sec. 57, Blk. 3, I.& G.N. Sur. ..... S.D. 2,964 ft.

Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,505 ft.

Empire G. & F. Co.'s No. 1 Crow, 875 ft. N and W, NE, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,710 ft.

Empire G. & F. Co.'s No. 1 Sailor, 330 ft. S and W, NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,523 ft.

Gardner Bros. and Collins' No. 2 Saunders, 955 ft. S, 330 ft. E of W 68 ac., E½, J. G. Eustice Sur. ..... Location.

Dick Graham's No. 1 Sullivan, 792 ft. N and W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Rig.

Jewell Oil Co.'s No. 1 Harrah, 330 ft. N and W, of W 40 ac., S 120 ac., E 240 ac., Sec. 163, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,920 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.&T.N. Sur. ..... S.D. 2,050 ft.

Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. ..... 9,000,000 ft. gas 2,325-35 ft; S.D. 2,775 ft.

Magnolia Pet. Co.'s No. 1 Sailor, 990 ft. S, 330 ft. W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,710 ft.

Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and E, of E 80 ac., NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Rig.

Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Location.

McAuley et al's No. 4 Morse, 350 ft. N and W, SE cor. NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,175 ft.

Midwest Explin. Co.'s No. 1 Cobb, 1,320 ft. W, 400 ft. S, NW, Sec. 165, Blk. 3, I.&G.N. Sur. ..... Rigging up.

Midwest Explin. Co. et al's No. 1 Waggoner, 1,320 ft. W, 330 ft. N, Sec. 173, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,060 ft.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... S.D. 2,385 ft; 1,000,000 ft. gas 2,295-2,354 ft.

Prairie Oil & Gas Co.'s No. 1 Carey, 372 ft. from W and 330 ft. from N of Sec. 114, Blk. 3, I.&G.N. Sur..... S.D. 3,150 ft.

Saulsbury et al's No. 1 Sheridan, 330 ft. S and E, W½ NE, Sec. 184, Blk. B-2, H.&G.N. Sur. ..... S.G. 2,805-15 ft; S.O. 2,835-45 ft; S.D. 3,037 ft; 600 ft. oil in hole 3,035-37 ft.

W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. ..... S.D. 2,270 ft.

Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... Drlg. 1,800 ft.

Smith & McDaniels' No. 1 Chapman, 990 ft. N and E, SW, Sec. 52, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,030 ft.

Sullivan et al's No. 1 Morse, 150 ft. W, 330 ft. S, N½ SW, Sec. 16, Blk. A-9, H.&G.N. Sur. ..... Location.

Reynolds et al's No. 1 Webb, 330 ft. N, 330 ft. E, NW, Sec. 60, Blk. 25, H.&G.N.R.R. Sur. ..... S.D. 2,550 ft; shot 60 qts. 2,345-62 ft. and 75 qts. 2,190-2,265 ft.

The Texas Co.'s No. 2 Brown, 170 ft. N, 330 ft. E, NW, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 430 ft.

Tedesco Oil Co. et al's No. 1 Morse, 330 ft. N and W, NE SW, Sec. 1, Blk. 26, H.&G.N. Sur. ..... Drlg. 1,180 ft.

Wilson et al's No. 1 Heaston, 330 ft. S and W, Sec. 160, Blk. B-2, H.&G.N.R.R. Sur. ..... 2,500,000 ft. gas 2,825 ft; S.D. 3,259 ft.

HUTCHINSON COUNTY

Great Plains O. & G. Co.'s No. 1 Sanford, C of S 160 of N 320 ac., Sec. 87, Blk. 46, H.&T.C. Sur. ..... Rigging up.

Holmes et al's No. 3 Quinn, 330 ft. S and W, Sec. 7, Blk. 9, I.&G.N. Sur. ..... Drlg. 385 ft.

Huber & Co.'s No. 1 Christian, 330 ft E and 990 ft. N of SW, Sec. 23, Blk. Y, A.&B. Sur. ..... Drlg. 2,180 ft.

Phillips Pet. Co.'s No. 1 Johnson-Trammell, 930 ft. N, 330 ft. W, SE cor. W½ NW, Sec. 38, Blk. Y ..... T.D. 3,250 ft.

Phillips Pet. Co.'s No. 1 Johnson-Mayer, 990 ft. N and 990 ft. W line, NE, Sec. 37, Blk. Y, A.&B. Sur..... S.D. 3,039 ft; P.B. to 2,683 ft; to test.

Phillips Pet. Co.'s No. 1 Herring, 330 ft. N and E. W½, Sec. 7, Blk. X02, H.&O.B. Sur. ..... S.D. 600 ft.

Phillips Pet. Co.'s No. 1 Pease, 330 ft. S and E, Sec. 9½, Z. E. Collier Sur. ..... Drlg. 600 ft.

Phillips Pet. Co.'s No. 1 Vake (Hazel), 330 ft. N and W, Sec. 4, Blk. XO2, H.O.&B. Sur. ..... T.D. 3,114 ft; P.B. for gas.

Sinclair O. & G. Co.'s No. 1 Johnson Bros., 330 ft. N and E, NW, Sec. 32, Blk. Y, A.&B. Sur. ..... S.G. 2,230-54 ft; drlg. 2,645 ft.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... Drlg. 3,110 ft; S.O. 3,065 ft. and 3,108-10 ft.

Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y ..... S.D. 3,108 ft; 60,000,000 ft. gas 3,060-75 ft.

Texas Interstate P. L. Co.'s No. 1 Bost, 660 ft. N and E, Sec. 9, Blk. Y-2, T.T.R.R. Sur. ..... S.G. 1,605 ft; S.D. 2,241 ft; S.O. 2,237 ft.

LIPSCOMB COUNTY

Brown et al's No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.G. 3,760 ft; S.D. 4,142 ft.

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,954 ft; shot 30 qts. to loosen bit.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Delmar Oil Co.'s No. 1 Jones, 990 ft. E, 330 ft. N, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... Drlg. 2,200 ft.

Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. ..... Gas estimated 15,000,000 ft. 3,050-60 ft; T.D. 3,645 ft; to complete as gasser.

Shamrock O. & G. Co.'s No. 1 Shory, 330 ft. N and W, NE, Sec. 187, Blk. 3-T, T.&N.O. Sur. ..... 35,000,000 ft. gas 2,830-3,050 ft; S.D. 3,505 ft; S.O. 3,472 ft; spraying 50 bbls. per day from 3,498-3,503 ft; 6,000,000 ft. gas 3,350-3,505 ft.

Texas Interstate P. L. Co.'s No. 1 Zotness, C NW, Sec. 55, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 1,835 ft.

Texas P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 46, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 1,430 ft.

MOTLEY COUNTY

Explin. Co.'s No. 6 Matador, 330 ft. N line, 330 ft. E line, Sec. 132, Blk. M ..... C.O. 4,150 ft.

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

POTTER COUNTY

Marshall Spivey's No. 1 Bivins, C SW, Sec. 39, Blk. M-20, G.&M. Sur. ..... Drlg. 500 ft.

Canadian River Gas Co.'s No. 1 McBride estate "A," 4,950 ft. S, 330 ft. W, E½ S½, Sec. 98, Blk. 46, H. &T.C. Sur. ..... Bldg. rig.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14.... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 ..... Shot 10 qts. 5,270-93 ft; S.O. 5,288 ft; S.D. 5,992 ft.

WHEELER COUNTY

Johnson et al's No. 2 Hicks, 890 ft. W, 990 ft. S, Sec. 49, Blk. 17, H.&G.N. Sur. ..... Fishing 1,625 ft.

Lone Star Gas Co.'s No. 1 Close, C SE SW, Sec. 78, Blk. 23, H.&G.N. Sur. ..... Drlg. 475 ft.

Lone Star Gas Co.'s No. 1 Ritchey, C NE NE, Sec. 3, Blk. 24, H.&G.N. Sur. ..... Spudding.

Long et al's No. 1 Willington, 330 ft. S and W, NW, Sec. 8, Blk. 27, H.&G.N. Sur. ..... Drlg. 1,125 ft.

Magnolia Pet. Co.'s No. 2 Worley, 330 ft. N and W, NE, Sec. 39, Blk. 24, H.&G.N. Sur. ..... Rig.

McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H.& G.N. Sur. ..... Drlg. 1,200 ft.

Murchison & Fain's No. 1 Grogan, C SE NW, Sec. 74, Blk. 23, H.&G.N. Sur. ..... Location.

Murchison & Fain's No. 1 Hanes, C NW NW, Sec. 31, Blk. 17, H.&G.N. Sur. ..... Location.

Murchison & Fain's No. 2 Purcell, C SW NW, Sec. 50, Blk. 17, H.&G.N. Sur. ..... Drlg. 1,200 ft.

Upham Gas Co.'s No. 1 Williams & Laycock, C NW NW, Sec. 5, Blk. 27, H.&G.N. Sur. ..... Location.

Wischkamper et al's No. 1 Kiser, 330 ft. N and E of SW, Sec. 33, Blk. 17, H.&G.N. Sur. ..... S.D. 1,510 ft.

Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ..... Drlg. 465 ft.

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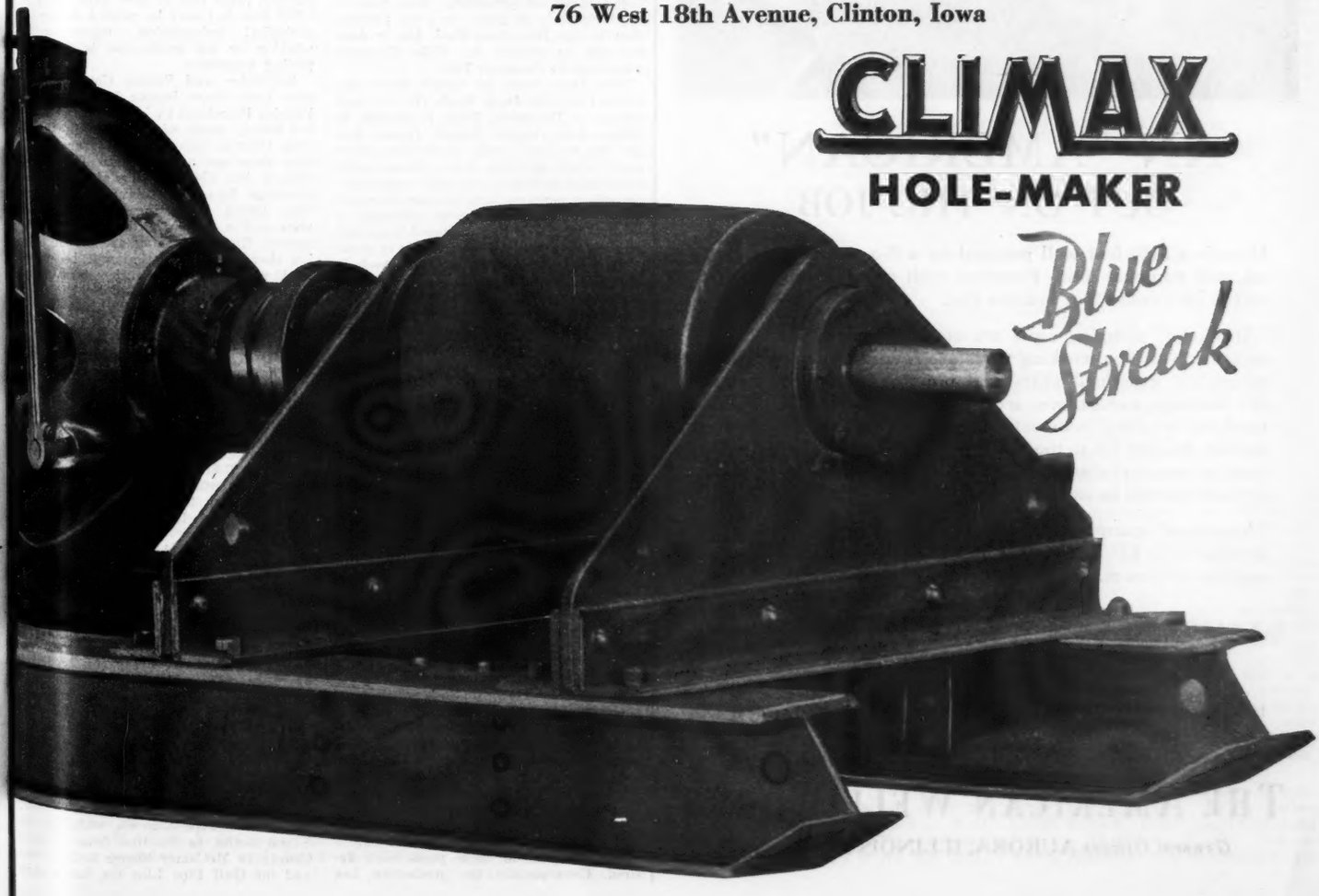

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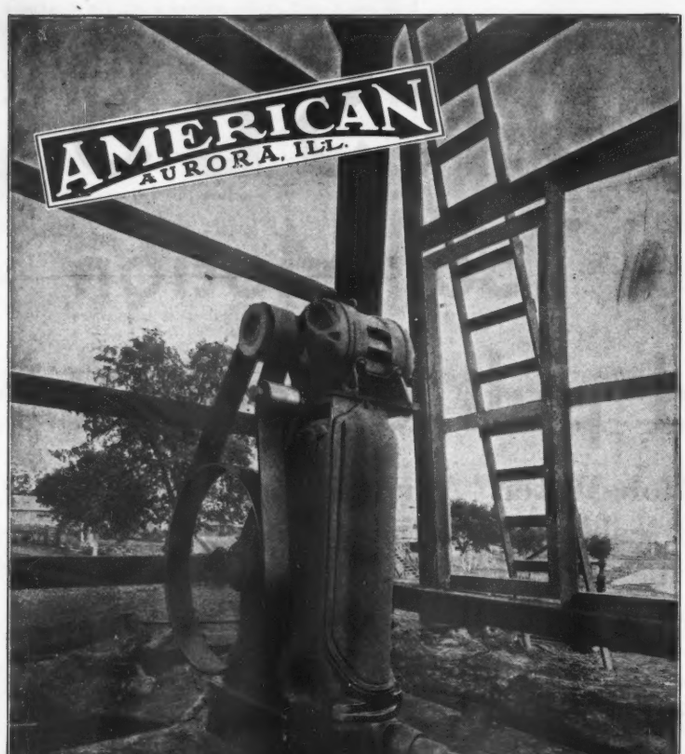

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OVERPRODUCTION DULLS WEST TEXAS FIELDS

(Continued from Page 132)

feet deep and the oil brings 50 cents per barrel at the well, gravity ranging from 21 to 24.5. The Cardinal Oil Co. opened this pool, and is the main producer in it although the Southern Crude Oil Purchasing Co. and Dixie Oil Co. own considerable of the daily production. This shallow production is located in Section 539, Arnold & Bennett Survey, and Section 61, Block 194, G.C.&S.F. Survey. The field is producing around 1,000 bbls. per day and drilling of other wells continues from week to week. This field is not carried under the Yates Pool proration. The Shell Pipe Line Co. is purchasing the oil produced from the 24 producing wells.

In Ward County

Jumping to Ward County we find that the Shipley Pool has lost almost all of its interest, and the Bennett Pool, discovered by R. R. Penn and the Atlantic Oil Producing Co., in Section 16, Block 34, H.&T.C.R.R. Survey, in September, 1929, does not look capable of expanding very much. Sid Richardson and others' No. 1 O'Brien in Section 5, Block F, G.M.M.B.&A. Survey, was perhaps the greatest feature of this county as it connected production for several miles from north to south, and proved up considerable more acreage on the Edwards & O'Brien ranch, making an extension of 3 miles to the O'Brien Pool. It had a showing of oil from 2,555-62 feet, another from 2,585-98 feet, from 2,615-31 feet and from 2,660-70 feet. It was completed at a total depth of 2,686 feet.

Winkler a Back Number?

Winkler County is but a shadow of its former self, and the county as a whole has been dull throughout the past six months. Brashara's No. 2 fee, located in Section 17, Block B-3, a short distance east of his No. 1, a gasser, also encountered gas at 3,008-10 feet and filled with oil, slopping over, and is making a small oil producer. This well is approximately 3 miles east of production in the Hendricks Pool, but it does not pay to produce it. This discovery was made in January, 1930.

The Deep Rock or Ogden Pool, discovered by the Deep Rock Oil Co. and others, in December, 1929, in Section 6, Block A-46, Public School Lands, has but one well on steady production, averaging about 90 bbls. daily. Three other wells being drilled by the same companies, on offset acreage, have so far failed to make commercial producers, although a south offset well has produced some oil, and the owners have been trying to make a flowing well out of it. This well is No. 1 King in Section 11, same block and survey. Total depth of this test is 4,454 feet, and top of the pay is 4,335 feet. Deep Rock and others' No. 1 Mathis in Section 4, same block and survey and No. 1 Miles in Section 22, Block A-46, are ready to be shot after drilling to depths which seem far below the pay horizon. Many believed this area might become a major producing lime pool for the basin, and there are possibilities yet, with production running to the north over onto University lands. The Atlantic Pipe Line Co.'s 8-inch line from the Atlantic's tank farm at Midland to Hobbs, N. Mex., runs near the Ogden producer in which the Atlantic Oil Producing Co. has an interest, and in case of major development in this area, the Atlantic will be the one to serve the field with a pipe line. So far it has not connected to the producing well, which is running its oil to storage.

Extensions in Howard-Glasscock

Due to the Howard-Glasscock County pools being extended farther to the west during the past several months, proration difficulties have caused the operators and producers in that area considerable trouble, for many wells in the Phillips-Coffee Pool, the farthest west extension, have been exceedingly good producers with daily potentials far above the amount of oil the pipe line companies and purchasers in these pools have desired. Consequently the production has been cut again and again, especially in the west fields, until at the present time the daily allotment of these fields is around 17,000 bbls. per day. Wells on the east side of the field, the older side, are allowed to produce up to a maximum of 125 bbls. per day, each, but the majority of them cannot make this allotment as water encroachment and gradual decline has cut their production down to but a small figure.

The Sinclair Oil & Gas Co. brought in a small well on its Dodge estate lease near the Howard-Mitchell County line in Howard County, extending Mitchell County production over into Howard County, but it hardly pays for pumping the well.

Irion County

The Tankersley Pool, near Mertzon in Irion County, is now developing into a larger pool as several small producers were completed in the past few months, and the daily average production crawling up from around 60 bbls. per day to the present daily average of better than 225 bbls., the oil being "sweet" and of 37 degrees gravity. This pool was opened in July, 1929, by the Brown and Fox discovery well on the Tankersley ranch. Carl Cromwell and others now have the majority of the production in the pool, and are continuing to drill other tests, and are extending the pool in length and breadth. A short 2-inch line runs from the field to a loading rack on the Santa Fe Railroad and the oil is shipped via tank car to the San Angelo refinery at San Angelo, bringing $1.03 per barrel.

Two deep wells in Irion County failed to encounter oil in commercial quantities, and one, Kingwood Oil Co.'s No. 1 Suggs, north of Mertzon was plugged after several shots. Total depth of this test was 7,818 feet.

World's Deepest Cable Test

P. H. Williams' No. 1 Ashe, in the Washington County School lands, is the deepest cable tool test in the world, and it was also drilled deep in an effort to find the deep pay from which wells are producing in the Big Lake Pool, Reagan County. This test is now shut down at 8,900 feet, but may be carried deeper for geological information, regardless of whether or not production is found in paying quantities.

Schleicher and Sutton Counties have seen much lease buying because of the Phillips Petroleum Co.'s test on the Whitten ranch, north of Eldorado in Schleicher County, encountering several small deep showings, and southern Tom Green County has also felt the effects of the showings found in this well. Southern Tom Green is getting several shallow tests and a couple of deep tests at the present time, and many are of the opinion that deep production will be uncovered somewhere in southeastern Irion, southern Tom Green or in Schleicher or Sutton Counties. The Phillips test, in Section 35, Block LL, T.C.R.R. Survey, Schleicher County, is now drilling below 6,800 feet with no present prospects of making a commercial producer.

Important Penn Pool

The Penn Pool, Ector County, was discovered October, 1929, by the Penn, Humble Oil & Refining Co. and Atlantic Oil Producing Co.'s test, in Section 7, Block 44, T.&P. Survey, and the field has a daily potential of around 23,000 bbls. Proration has been ordered to go into effect August 1, limiting the field to 15,000 bbls.

The field has been defined to the southeast and to the northwest, and one well, now in process of completion, one-half mile north of production, is defining the limits in that direction. The old Connell Pool is but 1½ miles west of production in the Penn Pool, but it is doubtful if the two areas can be linked by other wells which will eventually be drilled between the fields. Four pipe line companies are now serving the field; the Burford Pipe Line Co. with a 4-inch line to Winkler County thence to Pecos City; the Magnolia Pipe Line Co. with a connecting line to its 8-inch line, which runs north of the Penn Pool, from Winkler County to Midland thence to the Coast; the Humble Pipe Line Co. which has an 8-inch outlet to its line from Winkler County to McCamey thence to the Coast and the Gulf Pipe Line Co. has a short

connecting line from the pool to its line which runs from Winkler County to Midland thence to the Coast.

Great Interest in Hobbs Pool

West Texas interest has given way to the Hobbs Pool in Lea County, New Mexico, and within the next few months Texas producers will be watching the drilling of that pool and other Lea County operations, and its possibilities. Two more lines are reported for that area, to run to Winkler County, where there is much empty storage, and if the oil is not run on to the Coast through one or more of the various lines transporting oil from Winkler to the Gulf, Hobbs oil will probably be run to some of this storage. The Midwest is reported to be ready to construct a line from Hobbs to Winkler County and use Southern Crude Oil Purchasing Co.'s empty storage at Wicket, which is in the neighborhood of 3,500,000 bbls. From this place it could be shipped out via tank car over the Texas & Pacific Railroad, or some other company which has a line to the Gulf may run the oil for Midwest.

The Magnolia Pipe Line Co. is said to be planning on building an 8-inch line from Hobbs to Winkler County, and if this line is constructed, Magnolia's 8-inch to Midland thence to the Gulf will be assured of plenty of oil.

WEST TEXAS

Summary of Completed Wells, First Six Months, 1930

County—	Comp.	Prod.	Dry	Gas
Andrews	1	162	0	0
Borden	2	0	2	0
Brewster	2	0	2	0
Coke	2	0	2	0
Concho	2	0	2	0
Crane	19	7,938	0	0
Crockett	8	544	3	0
Culberson	2	0	2	0
Ector	42	27,038	1	1
El Paso	1	0	1	0
Fisher	6	864	5	0
Gaines	1	0	1	0
Garza	1	0	1	0
Glasscock	24	19,950	3	0
Howard	60	12,558	5	0
Hudspeth	1	0	1	0
Irion	10	170	8	0
Jones	9	163	7	0
Kent	2	0	2	0
Kimble	3	0	3	0
Loving	7	1,870	2	0
Menard	2	5	1	0
Mitchell	6	409	4	0
Nolan	3	0	3	0
Pecos	139	78,267	45	3
Presidio	1	0	1	0
Reeves	3	0	3	0
Reagan	6	1,881	1	0
Runnels	2	0	2	0
Scurry	1	0	1	0
Sterling	1	0	1	0
Sutton	1	0	1	0
Taylor	3	250	0	0
Tom Green	4	0	4	0
Upton	16	2,679	2	0
Ward	24	897	10	0
Winkler	10	3,829	1	0
Total	427	159,464	133	4
Total 1st 6 mos. 1929	583	1,273,890	192	6
Difference	156	1,114,336	59	2

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	67	40,453	20	0
February	72	37,119	20	2
March	76	16,600	31	0
April	63	18,035	23	2
May	89	31,319	25	0
June	60	15,938	14	0
Total	427	159,464	133	4

CURTAILMENT HOLDS BACK OKLAHOMA'S PRODUCTION

(Continued from Page 129)

and plugged back to a sand at 3,502-12 feet, split the casing and completed the well at that depth. The well made 720 bbls. on the first 24-hour test. It started a lot of drilling in the surrounding area and by the close of June the pool was producing 15,000 bbls. a day. The producing sand has not been positively identified and has been called the Wanette sand for want of a better name. The pool at the close of the half year was regarded as an important part of the Greater Seminole area and was being held back by curtailment to 25 per cent of potential.

The Konawa Pool was defined to the north shortly after it was opened by several dry holes in Section 8-6-6. The last half of April found Konawa with nine failures in four different sections surrounding large producers. Shell Petroleum Corp.'s No. 1 Caesar, NW cor. SE SE, Section 20-6-6, Seminole County, was the largest producer in the pool during the first six months of the year. The well made 5,027 bbls. in 24 hours pinched in from sand at 2,930-38 feet. Other large wells in the pool, were W. B. Pine's and Hilton Phillips and others' No. 2 Burgess, NW cor. NE, Section 29-6-6.

South Earlsboro Discovered

The South Earlsboro Pool was opened in February when the Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Grounds, SE cor. NE NE, Section 22-9-5, was completed for 7,365 bbls. on the gauge of February 23. It was apparent early in April that the productive part of the pool would not cover a large area, and operators were not favorably impressed with the results of the wells being completed. The first location south of the discovery well, the Magnolia Petroleum Co.'s No. 1 Grounds, NE cor. NW, Section 23-9-5, swabbed 1,050 bbls. in 20 hours from the Wilcox sand at a total depth of 4,227 feet. The north offset was drilled by the Gypsy Oil Co. in the SW cor. SE, Section 14-9-5. It swabbed 95 bbls. of oil and 1½ bbls. of water in an hour. The Amerada Petroleum Corp. and Dixie Oil Co.'s No. 2 J. Grounds, NW cor., Section 23-9-5, was the second to the largest well ever completed in the Greater Seminole area. It was the largest well completed outside of the St. Louis Pool. It first made 11,450 bbls. from the Wilcox sand at 4,210 feet, and was drilled deeper to 4,224 feet, and shot with 20 quarts. After the shot the best day's production was 14,800 bbls. The well was making 3,800 bbls. a day before being drilled deeper.

The first failure completed in the pool was by the Prairie Oil & Gas Co. The test was No. 2 Grounds, NE cor. NW NE, Section 23-9-5. It was completed in Wilcox sand at a total depth of 4,239 feet, with a hole full of water.

Deepening in Old Seminole Pool

In the old Seminole City Pool, some of the old producers were drilled deeper to the second Wilcox sand horizon and after a shot increased their production. In March, the Pure Oil Co.'s No. 5 Strothers, NW cor. NE SW, Section 26-9-6, an old well, was drilled from 4,198 feet to 4,212 feet, where it was shot and made 480 bbls. a day on the pump. Same company's No. 6 Strothers, SE cor. SW, Section 26-9-6, was deepened from 4,078 feet to 4,090 feet and increased its production. Both of these wells were among the first completed in the Seminole area.

The Searight Pool was inactive until May when the production in the pool was extended by a shallow sand well. The Papoose Oil Co.'s No. 2 Marks, NW cor. SE NW, Section 32-10-6, Seminole County, extended production in the Cromwell sand. The oil was found at 3,868-74 feet, where it flowed 515 bbls. the first 12 hours. This important extension resulted in several new locations and these new developments were being watched by operators in the area. The second well was completed in the new extension by the Twin State Oil Co. It was No. 1 Marks, SW cor. NE NW, Section 32-10-6. It made 625 bbls. of oil in 24 hours from sand at 3,830-31 feet. It was drilled deeper to a total depth of 3,834 feet and made 3,205 bbls. the first 24 hours.

The deepest test in the Greater Seminole area was completed in the Mission Pool. It resulted in a dry hole but furnished geological data on the deeper formations in the area. The test was the Gypsy Oil Co.'s No. 9 Barkus, NW cor. SW SW, Section 6-8-6, Seminole County. It was drilled deeper after the production had declined. The Silicious lime was found at 5,840 feet, where the 4¾-inch casing was landed. The test had been carrying 5,000 feet of water. It was later abandoned at a total depth of 6,204 feet.

The last week in February a wildcat owned by Keister & Manning, No. 1 in Section 30-8-4, Pottawatomie County, flowed 420 bbls. in 24 hours at 4,465-81 feet. Operators decided to curtail new operations in the area.

A wildcat test southwest of the Earlsboro Townsite, in Pottawatomie County, in May, was showing oil and gas. It was the Lippa Drilling Co.'s No. 1 Kelly, NE cor. SE NW, Section 19-9-5. The production was found in the Hunton lime at 4,067-90 feet. The oil rose in the hole 3,500 feet in a few hours and it later gauged 380 bbls. of oil on May 29, swabbing.

Extension in Logan County

The Prairie Oil & Gas Co.'s No. 1 Kendrick, SW cor. NW SE, Section 21-18-4w, in the Crescent-Lovell Pool, in Logan County, opened a new producing sand for the area in March and extended production in the pool. The well made 178 bbls. in 24 hours from the sand at 4,987-93 feet. The well missed production in the 3,900-foot sand, which was found by other wells in the district. During the balance of the six months of this year the development in the area was slow. The production of Logan County has been prorated and new development work is being delayed.

The Magnolia Petroleum Co. completed a well in the deep horizon in the Perry district in Noble County in January, No. 2 Young, NE cor. NW NW, Section 22-21-2w. It was estimated at 2,500 bbls. a day, but was pinched to 900 bbls. a day with 400 pounds back pressure.

Peerless Oil Producing Co.'s No. 1 Wentz, NW cor. SW, Section 22-22-1, Noble County, a wildcat, was completed in March and made 105 bbls. in 30 minutes when opened after being shut in for a week. The well made an average of 90 bbls. a day on the pump.

Deepest Test in State

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Section 14-26-24w, Harper County, wildcat, was one of the most interesting wildcats ever drilled in Oklahoma. It is the deepest test drilled in the State. It had a showing of oil and gas at 6,711-16 feet in a rotary hole. The standard tools were rigged up at a total depth of 8,580 feet. Taking a survey of the test, it is 2,000 feet deeper than production is found in the Oklahoma City Pool. The surface elevation at the test is 2,275 feet, which indicates it was drilling at 6,305 feet below sea level. It has been drilling in the Mississippi lime for the last 1,700 feet, which is believed to be the thickest section of Mississippi lime ever found in any test well in the State. It resumed drilling with standard tools and only 3 feet were drilled, when it was decided to abandon it at 8,583 feet. It is estimated to have cost the company $250,000.

The Oklahoma Panhandle, long dormant, was one of the active leasing areas in the first part of the year. The Argus Production Co. put 99,000 acres of leases on record in Texas County, scattered in different sections in the county. Empire Oil & Refining Co. secured a block of 56,000 acres and the Gypsy Oil Co. a block of 32,000 acres in the three counties. The leasing in the area was due to the activity in the gas field in Stevens County, just over the state line in Kansas.

Lincoln County's Newest Pool

Lincoln County's production was increased during the first six months by new wells in the West Chandler Pool. Magnolia Petroleum Co. added a producer in March to the area. The well was No. 1 Mayer, NE cor., Section 17-14-4. It flowed 664 bbls. the first 10 hours from the Simpson sand at 4,994-96 feet. In April the same company's No. 2 Benedict, NE cor. SE NW, Section 7-14-4, extended production in the Wilcox sand 1¼ miles northwest of the other producers. The well flowed 155 bbls. in 45 minutes from sand at 5,072-77 feet. It was later drilled deeper and gauged 4,920 bbls. in 24 hours. The first showing of oil was found in the Viola lime at 5,045 feet.

In Pittsburg County several gas wells were completed in the Quinton gas field. The Mid-Western Oil & Gas Co.'s No. 2 Carney, NE cor. NW NE, Section 5-7-18, was on fire the first week in March. After burning for several days the master gate was closed and the fire extinguished. The gas well was estimated at 22,000,000 feet from sand at 1,823-97 feet.

Southern Oklahoma Active

The middle of January found a new test in the Palacine area, Stephens County, showing oil. Wirt Franklin Petroleum Corp.'s No. 2 Spain, SW cor. NW, Section 9-2s-6w, found the showing of oil and gas at 3,156-63 feet. The same company's No. 1 Green, NW cor. SW NW, Section 9-2s-6w, was pumping 250 bbls. a day from the same horizon. Magnolia Petroleum Co. completed its No. 2 Andreae, NE cor. SE, Section 8-2s-6w, Stephens County, for 30,000,000 feet of gas from a total depth of 3,565 feet.

Dunmarr Oil Co.'s No. 1 Randle, SE cor., Section 8-2s-6w, extended production a half mile southwest. The well flowed 456 bbls. the first 19 hours and the gas was estimated at 8,000,000 feet. Production was found in sand at 2,847-83 feet. Wirt Franklin Petroleum Corp.'s No. 1 Martin, NE cor. NW SW, Section 9-2s-6w, made 550 bbls. of oil. It had been a gas well making 40,000,000 feet of gas. The gas exhausted and the oil came in. Same company's No. 2 Martin, NE cor. SE SE, Section 9-2s-6w, was completed in April for 702 bbls. in sand at 2,855-69 feet.

A deep dry hole was completed in Carter County by the Magnolia Petroleum Co. in its No. 3 Hightower, SW cor. NW NE, Section 30-1s-3w, at a total depth of 4,360 feet.

Deepening in Caddo County

The Cement Pool in Caddo County was active; operators were drilling old producing wells deeper and finding larger production in the deeper horizons. The flush production increased in that area until a 30 per cent proration plan was made effective in June. In February, Ramsey Oil Co. closed a series of deals whereby it secured between 5,000 and 6,000 acres of leases in the Cement district of Caddo County. The company plans to drill a deep test to 6,500 feet or to the Silicious lime and test part of the acreage. Same company also acquired 1,083 acres and 23 producing oil wells and one gas well. The total production of the oil wells was 125 bbls. a day. Some of these wells may be deepened to the new producing horizons found by Noble-Olsen Drilling Co. and others in the Cement Pool at 3,400 feet. Ramsey Petroleum Co. also acquired an interest in the Lone Star Gas Co.'s properties with 12 producing oil wells making 56 bbls. a day.

Magnolia Petroleum Co.'s No. 6 Caddo-Rowe, SE cor. NE SW NE, Section 36-6-10w, Caddo County, flowed 850 bbls. a day, after being drilled 27 feet deeper to a total depth of 3,327 feet. The well had been making 150 bbls. a day from the old total depth. In April another well was drilled deeper and increased its production. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 1 E. M. Rowe, SW cor. NW NE, Section 36-6-10w, was drilled from 3,285 feet to 3,307-16 feet, where it started to produce at the rate of 100 bbls. an hour, and made 1,165 bbls. on the gauge of April 24, pinched.

Activity in Madill District

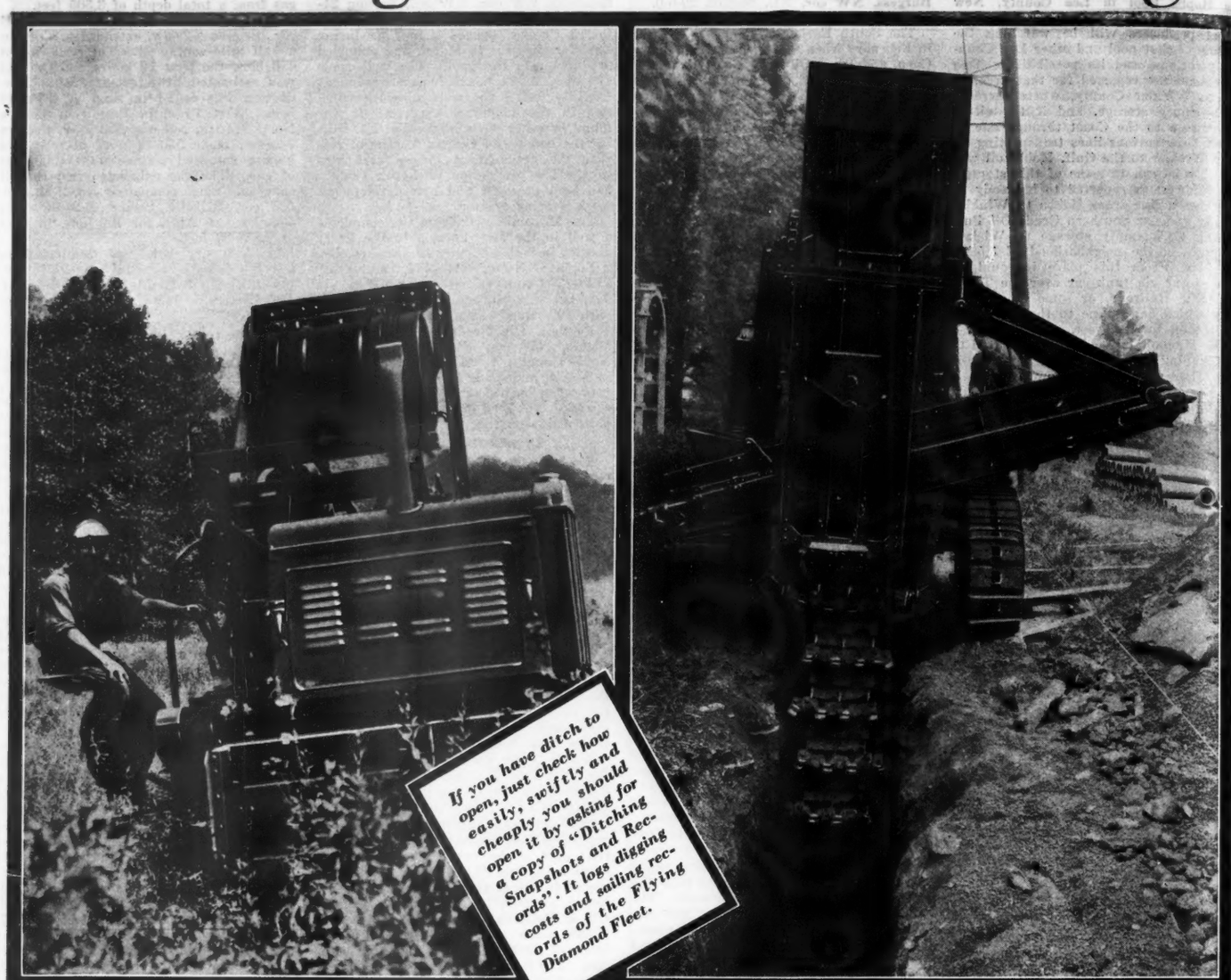
The Madill Pool in Marshall County was the most active shallow area in the State during the first six months of the year. Wells were found ranging from 10 to 250 bbls. a day in sands from 500 to 550 feet deep. The oil production was found in a sandy lime which some believed to be the Hunton lime. The Magnolia Petroleum Co.'s No. 2 Coatesworth, NW cor. SW SW SW, Section 30-5s-5, on the southeast edge of the pool, made 250 bbls. of oil in 24 hours.

Southwestern Counties

In February, oil was found in an old gas well southwest of Sayre in Beckham County. The area has been tested for oil but only gas had been found. The oil was found in the Sayre Oil & Refining Co.'s No. 1 Porch, NW cor. SE, Section 24-9-24w, Beckham County. It was completed as a gas well about a year before. The showing of oil was noticed while cleaning out. It started flowing at an estimated rate of 100 bbls. a day. The well was completed as an oil well at a total depth of 2,767 feet. Its completion started a leasing campaign; blocks were assembled and core drills were moved into the area. The oil well is located southeast of the main gas field, which is six years old.

The Empire Oil & Refining Co. completed a deep wildcat test in Cotton County in June. It was No. 1 Chambers, NW cor. SE, Section 8-3s-9w. The operators planned to drill to 5,000 feet, but

Outsailing All Others *through*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abandoned it in Silicious lime at 4,460 feet.

OKLAHOMA

Summary of Wells Completed First Six Months 1930

County—	Comp.	Prod.	Dry	Gas
Carter	27	2,531	7	0
Creek	125	4,938	44	17
Pawnee	61	2,388	20	5
Grant	9	0	5	4
Logan	13	6,657	4	1
Pittsburg	10	0	2	8
Garfield	5	1,303	3	0
Tillman	3	0	3	0
Cotton	74	4,698	12	1
Hughes	21	805	6	10
Pontotoc	59	5,679	10	1
Jefferson	15	1,770	3	0
Beckham	3	100	1	1
Sequoyah	2	0	1	1
Comanche	1	0	1	0
Cleveland	1	0	1	0
Grady	7	0	0	7
Muskogee	120	2,673	62	25
Pottawatomie	103	38,939	15	3
Kay	9	361	4	1
Caddo	21	7,028	7	1
McIntosh	4	0	3	1
McLean	2	46	1	0
Okmulgee	60	403	22	12
Okfuskee	68	1,945	26	12
Seminole	422	369,476	84	31
Kiowa	16	39	12	0
Canadian	1	0	1	0
Woodward	4	0	4	0
Noble	5	250	2	1
Oklahoma	263	1,988,555	3	15
Osage	93	5,090	31	9
Stephens	72	4,138	36	4
Johnson	1	0	1	0
Garvin	3	0	3	0
Atoka	1	0	1	0
Greer	2	0	2	0
Lincoln	16	8,625	7	3
Tulsa	24	38	18	2
Wagoner	42	51	28	10
Marshall	64	3,435	21	0
LeFlore	3	0	1	2
Payne	33	7,505	11	2
Latimer	1	0	1	0
Washington	3	25	2	0
Nowata	2	23	0	0
Craig	2	1	0	1
Bryan	2	0	2	0
Total 6 mths. 1930	1,898	2,470,015	534	191
Total 6 mths. 1929	1,740	488,960	618	149
Difference	158	1,981,055	85	42
Summary by Months				
January	383	580,301	100	43
February	160	242,983	40	20
March	285	372,510	89	32
April	367	556,508	106	35
May	316	303,203	94	27
June	387	414,510	105	34
First half 1930	1,898	2,470,015	534	191
First half 1929	1,740	488,960	618	149
First half 1928	1,821	328,155	657	292
First half 1927	2,365	963,276	727	247
First half 1926	2,545	380,359	789	270
First half 1925	2,436	458,049	721	228

CALIFORNIA FIELDS

(Continued from Page 82)

The Shell's next completion in this field will probably be No. 48 Taylor as this well has just started flowing into the sump, and, while the output is at the present time cutting approximately 50 per cent, it may clean up within a short time. The Union Oil Co. completed No. 4 Crane, a new well in the South Mountain Field of Ventura County, and it is at the present time pumping 130 bbls. of clean 22.1 gravity oil per day from 4,444 feet. The Richfield Oil Co. is making good progress with the pier which it is building out into the ocean at Rincon in order to facilitate drilling operations on No. 3 Hobson State, a tideland drilling project. The Vaqueros Major Oil Co. is erecting two 2,500-bbl. tanks on its Union Annex lease in the Santa Maria Field in order to conclude an exhaustive pumping test on its initial completion in this area. This company has leased approximately 2,000 acres from Ralph Arnold and its holdings are entirely surrounded by approximately 22,000 acres held in fee by the Union Oil Co. The Associated Oil Co. has abandoned 27 wells in California within the past 60 days and will probably list quite a number more in the Salt Lake Field due to expiration of several leases. In the Coalinga Field, the company recently abandoned 12 holes, following 10 abandonment notices previously posted at Casmalia and five additional notices at Salt Lake.

CANADIAN FIELDS

(Continued from Page 82)

passing through 15 feet of oil saturated sand.

In the Suffield area, Ontario-Alberta Oil Co.'s No. 1, LSD 11, Section 4-17-8w4, is shut down at 3,540 feet after encountering shows of oil and gas. The hole is apparently too small to carry down to the break in the lime, and a new test may be started.

In the Lethbridge area, Texas Oil Co. is preparing to start work on acreage taken over from Lethbridge Petroleums. Some further core drilling will be done.

On the Montana side, Sunburst Oil & Refining Co.'s wildcat on the Pinhorn structure, is reported drilling at 2,265 feet with some small flows of gas.

Drilling in Foothills

On the Highwood structure, Western Alberta Oil Co.'s No. 1, LSD 11, Section 7-17-2w5, is standing at 3,878 feet, of 746 feet in the lime, with apparently some deflection from the vertical. Light crude showings have been met and a shot is being considered, but it is feared this would prevent further deepening, so the well may be drilled deeper and later shot if production does not develop in the lower horizons.

In the same area, Northwest C. & E.'s No. 1, LSD 8, Section 35-18-3w5, is drilling at 3,050 feet, 567 feet in the lime. This is much deeper than the normal producing horizon of the Madison limestone in the Turner Valley Field. Up to the present, however, the lime drilled on the Highwood structure cannot be correlated with the same formation in Turner Valley, and only further drilling will disclose whether this present lime contains a production zone or whether the bit must pass this formation before entering a similar zone to that in which production is found in the Turner Valley. The lime on the Highwood structure was encountered at considerably shallower depth, so that much deeper geological horizons can be reached here.

Near Lundbreck, Raven Oils, Ltd. has purchased 80 acres of surface ranks from J. Limoges, and is preparing to start drilling. Tentative location was made some time ago in Section 28-10-2w5. On the south end of the Watson structure, Source Rock Petroleum, Ltd. is reported unloading drilling equipment for a test.

Pincher Creek Tests

In the Pincher Creek area, Weymarn Petroleums' No. 2, LSD 5, Section 7-6-1w5, is reported preparing to resume at 1,878 feet. The Henry L. Doherty interests of New York, through a subsidiary, the Alberta Gas & Fuel Co., which has already drilled three tests in the Pincher Creek area, are reported preparing to start a fourth commercial test on Calgary & Edmonton Corp.'s acreage. As a preliminary to locating this test, some 14,000 feet of core drilling was done in the foothills. Location was made in LSD 16, Section 34-3-30w4, some distance north and east of the previous abandoned wells. The test will be known as No. 1 Yarrow, and is on the same structure as the Imperial Twin Butte wells drilled some years ago, one of which went to 2,780 feet and the other to the then record depth of 4,375 feet before being abandoned.

In southern Alberta near Raymond the Nordon Corp. is reported starting a structure test on Robinson Brothers farm near Twin River.

In the Wainwright Field, east central Alberta, Fabyan Petroleums' No. 1, LSD 8, Section 24-45-8w4, has been abandoned and the rig skidded to No. 1-B in the same section. Coring at No. 1 showed a promising oil saturation.

On the Duvernay structure north of Edmonton, Alberta Pacific Consolidated's No. 1, LSD 5, Section 34-55-12w4, has resumed drilling after testing a show of oil at 1,700 feet. A little oil was recovered, but the test failed to show commercial production.

Ribstone Field

In the Ribstone Field, eastern Alberta, Imperial Oil's No. 2 Ribstone, LSD 14, Section 9-45-1w4, was recently inspected by Imperial officials. Oil stood at 1,237 feet in the hole, and arrangements were made to bail 1,000 bbls. Meridian Oils' No. 2, LSD 1, Section 16-45-1w4, is shut in, but is claimed to be a large potential producer. Ribstone Oils, Ltd., is reported to have made three new locations. Expenditure on development in the Ribstone Field up to the present is estimated at around $500,000, resulting in several dry holes on the fringe of the field and three producers in the Meridian area, with a claimed aggregate production of 600 bbls. a day. It is claimed the 16 gravity Ribstone crude will yield a large percentage of gasoline by cracking process.

Operations at Castor

Canadian Exploration Co. of Denver and Alberta Pacific Consolidated Oils of Calgary have secured additional acreage in the Castor area. Acreage leased by various companies extends 39 miles north and south and 15 miles east and west. Beaverdam Syndicate of Castor has leased 800 acres on the Paintearth and Castor structures, and is reported arranging for drilling. Mayor R. M. Spratt of Castor is chairman, and Macdonald Millar secretary-treasurer. Young Petroleums, Ltd., which recently secured a franchise to supply natural gas for Castor, is reported preparing to drill immediately.

British Columbia

In the Okanagan district of British Columbia, some development is likely to be started this year. The area was investigated last year by interests connected with the Shell Oil Co. A Kelowna, British Columbia, syndicate leased some acreage to be developed by United Resources Co. of Calgary. Julius Rickert, petroleum geologist, has made tentative locations.

In Akamina Valley, southeastern British Columbia, Akamina Valley Oil Co.'s No. 1 test is reported rigging up to start drilling in August.

Victor J. Freeman and associates are reported preparing to start a test near Steveston. The same syndicate has leased acreage in various parts of British Columbia, including the Quesnel district, where coal operations recently disclosed showings of 36 gravity crude. V. S. Shipley of Kansas City, Mo., will be associated with Mr. Freeman, and the Kansas-Missouri Oil Co. is reported interested.

Saskatchewan Test

In Saskatchewan, Unity Valley Oil Co.'s No. 3, Section 14-41-24w3, near Vera, is preparing to resume drilling at 2,090 feet.

Ontario Drilling

In Brant County, Ontario, Petrol Oil & Gas Co., which recently completed Nos. 21 and 22, shallow gassers on the Six Nations Indian Reserve in Onondaga Township, is starting Nos. 23 and 24. No. 21 is reported making 90,000 feet a day and No. 22 making 150,720 feet. Production is secured at about 500 feet.

SOUTHWEST TEXAS

(Continued from Page 76)

northeast line, 150 feet northwest line, Block 7, Survey 65, total depth 1,235 feet, completed, estimated 4,000,000 feet gas, spraying oil; No. 8 "B" F. Cuellar, 490 feet southeast line, 150 feet northeast line, Block 7, Survey 65, total depth 1,248 feet, completed 70 bbls.

Bruner Pool—Caldwell County

Humble Oil & Refining Co.'s No. 5 New, 450 feet south line, 1,350 feet west line of 85-acre tract in Bruner Pool in the J. Hinds Survey, total depth 2,205 feet, completed flowing 125 bbls.

Agua Dulce Pool—Nueces County

Saxet Oil Co.'s No. 1 Donnegan, 700 feet north and east lines of east 240 acres of Donnegan tract, 5 miles west from Corpus Christi, total depth 4,091 feet, completed 10 bbls. oil, 1,500,000 feet gas and water.

Pettus Area—Bee County

Houston Oil Co.'s No. 1 Newman, 300 feet south line, 300 feet west line of 197-acre tract offset to Cosden's well in the J. A. Kerr Survey, total depth 3,689 feet, completed 300 bbls.

Cosden Oil Co.'s No. 2 McKinney, 860 feet south line, 300 feet east line of tract in the South John Pace Survey, total depth 3,682 feet, completed 2,080 bbls.

Batex Petroleum Co.'s No. 1 Mrs. H. J. Burnett, 360 feet north line, 300 feet east line of north 100 acres of 300-acre farm in the John Pace Survey, completed flowing 250 bbls.

ABANDONED TESTS

Darst Creek—Guadalupe County

Dilworth Hager's (A. M. H. Oil Co.) No. 1 Bibb, 150 feet out of SE cor. of northeast 50 acres of 217-acre tract, 1,550 feet south of Penn-Tex Oil Co.'s No. 1 Roamel in the J. R. Robinson Survey, total depth 2,571 feet, dry and abandoned.

NEW LOCATIONS

Dobrowolski Pool—Bexar County

Bolling & Michael's No. 1 J. P. Adams, 150 feet south line, 300 feet west line of lease in the Miguel Gortaris Survey, total depth 650 feet, drilling in hard gumbo.

Darst Creek—Guadalupe County

Humble Oil & Refining Co.'s No. A-2 Dowdy, southwest part of Darst Creek, offset to Empire Gas & Fuel Co.'s No. 5 Dowdy, NE cor. of "A" lease, location.

Luling Oil & Gas Co.'s No. 1 Goldman, 690 feet southwest line, 150 feet northwest line, spudding in.

Pettus Area—Bee County

Arkansas Fuel Oil Co.'s No. 1 J. Kimball, 200 feet to south line, 200 feet to west lines of 80-acre tract A. C. Billingsly 249-acre tract in the Stephen Winship Survey, one-half mile northeast from Grayburg's No. 1 Kimball, spudded in.

Getty Oil Co.'s No. 1, Block 40 Townsite in the G. A. Kerr Survey, rigging up.

G. F. Getty Petroleum Corp.'s No. 2 J. E. O'Connell, center of Block 40, location.

Hicks & Young's No. 1 Billingsley, 155 feet south and west lines of tract in the B. Q. Hadley Survey, spudded in and shut down.

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, center of Block 9 of 11,000-acre Quincy Subdivision of Bee County, location.

The Texas Company's No. 3 J. R. Scott, 7,100 feet southwest of No. 1 in the J. M. Urango Survey, location.

Union Producing Co.'s No. 17 Ray, 1,200 feet north of No. 11, location. No. 18 Ray, east offset to Buchanan & Ogden's No. 1, Block 38, in the George A. Kerr Survey, location; No. 19 Ray, east offset to Block 37, of townsite in the George A. Kerr Survey, location; No. 20 Ray, east offset to Humble's No. 5 McKinney, 150 feet south and 150 feet east of the southeast corner of Pettus townsite in the George A. Kerr Survey, location; No. 21 Ray, east offset to Block 40, of townsite, 900 feet south and 150 feet east of the northeast corner of townsite in the George A. Kerr Survey, location; No. 22 Ray, east offset to Block 39, 1,260 feet south and 150 feet east of the northeast corner of townsite in the George A. Kerr Survey, location. Wilson & Hill's No. 1, Block 14, Townsite, center of block, application made for special permit to be heard July 28.

Cole Pool—Duval County

W. E. Mulholland's (Miller I. Shaw) No. 2 S. Benavides, 218 feet north line, 1,050 feet west line, Survey 173, total depth 600 feet, drilling.

Kohler Pool—Duval County

South Texas Production Co.'s No. 1 Peters, 2,310 feet north line, 450 feet west line, Survey 398, spudded in.

Carolina-Texas—Webb County

Magnolia Petroleum Co.'s No. 1 Jones-Wright, 330 feet south line, 330 feet west line, Survey 674, rigging up.

Cole Pool—Webb County

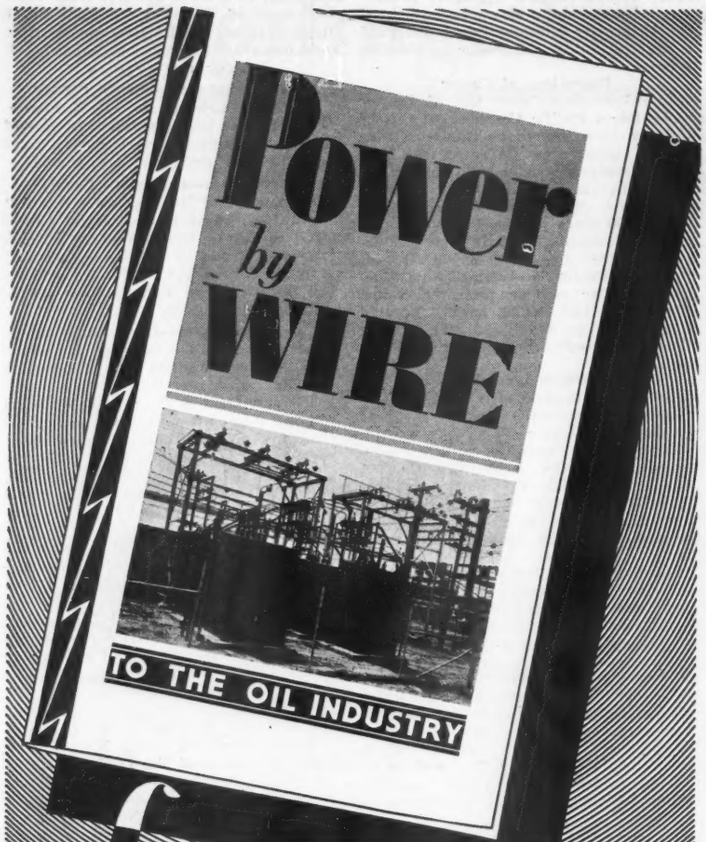
French Oil Corp.'s No. 3 Rosa Benavides, 950 feet north line, 150 feet east line, Survey 659, total depth 250 feet, drilling. Magnolia Petroleum Co.'s No. 4 A. Benavides, 950 feet north line, 150 feet east line, Survey 660, total depth 52 feet, drilling in rock.

Pappas Pool—Zapata County

John Pappas Pool, Inc.'s No. 1 Flores, 2,977 feet southeast line, 6,000 feet Rio Grande River, Porcion 35, rigging up.

Jennings-Muckelroy—Zapata County

Alamo Drilling & Leasing Co.'s No. 4 Trevino, Block 1, Survey 66, total depth 300 feet, drilling. Allied Gas Co.'s No. "A" I. G. Trevino, 450 feet southeast line, 170 feet southwest line, Block 6, Survey 65, total depth 1,234 feet, coring; No. "A" 8 I. G. Trevino, 1,050 feet southwest line, 150 feet northwest line, Block 6, Survey 65, total depth 1,247 feet, completed, estimated 75 bbls.; No. "A" 9 I. G. Trevino, 450 feet southeast line, 150 feet east line, Block 6, Survey 65, derrick; No. "A" 10 I. G. Trevino, 150 feet east line, 1,350 feet southeast line, Block 6, Survey 65, location. Edgington & Niles' No. 4 "B" I. G. Tre-



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vino, 750 feet southwest line, 150 feet southeast line, Block 4, Survey 65, rigging up; No. 5 "B" I. G. Trevino, 150 feet southeast line, 1,050 feet southwest line, Block 4, Survey 65, location; No. 6 I. G. Trevino, 750 feet south line, 150 feet west line, Block 26, Survey 214, total depth 1,225 feet, sand 1,216-25 feet, running tubing. Keen & Jackson's No. 1 M. Garza, 150 feet northwest line, 150 feet southwest line, Block 59, Subdivision Zorro Ranch, Comitas grant, location. J. G. Nix and R. F. Blankenship's No. 2 G. T. Montemayor, 490 feet south line, 150 feet west line, Block 1, Survey 64, total depth 1,278 feet, sand 1,271-78 feet, waiting on cement. S. R. C. Co.'s No. 3 "A" Trevino, 150 feet north line, 150 feet west line, Block 8, Survey 66, total depth 1,237 feet, sand 1,237 feet, waiting on cement; No. 6 "B" F. Cuellar, 1,290 feet southwest line, 150 feet northwest line, Block 12, Survey 65, total depth 1,244 feet, completed 65 bbls.; No. 7 "B" F. Cuellar, 490 feet northeast line, 150 feet northwest line, Block 7, Survey, 65, total depth 1,235 feet, completed 4,000,000 feet of gas, spraying oil; No. 8 "B" F. Cuellar, 490 feet southeast line, 150 feet northeast line, Block 7, Survey 65, total depth 1,248 feet, completed 70 bbls.; No. 9 "B" F. Cuellar, 150 feet southeast line, 150 feet southwest line, Block 10, Survey 65, location changed; No. 10 "B" F. Cuellar, 150 feet southeast line, 150 feet northeast line, Block 7, Survey 65, rigging up.

DRILLING ACTIVITY

Dobrowolski Pool—Bexar County

Eckert & Son's No. 7 L. Sandemer, 150 feet west line, 550 feet south line 110-acre tract, Survey 52, location. Penn-Tex Oil Co.'s No. 3 Sandemeyer, 330 feet west of No. 2 in the M. Menchaco Survey, location.

Buchanan Pool—Caldwell County

Buchanan-Danciger's No. 2 L. K. Brown, 300 feet north of No. 1 in the C. M. Cannon Survey, location.

Darst Creek Field—Guadalupe County

Empire Gas & Fuel Co.'s No. 5 Dowdy, 792 feet north line, 150 feet east line of tract in the J. C. Darst Survey, total depth 21 feet, set surface pipe. Gulf Production Co.'s No. 2 Malear, 450 feet southwest line, 150 feet northwest line 72-acre tract in the Jerome B. Alexander Survey, total depth 2,622 feet, drilling; No. 4 Posey, 488 feet southwest line, 150 feet southeast line of 71-acre tract in the J. R. Robinson Survey, location; No. 5 Posey, 150 feet south and west lines of tract in the J. R. Robinson Survey, location. Magnolia Petroleum Co.'s No. 3 L. V. Echols, 2,400 feet southwest line, 1,100 feet southeast line of farm in the James Hodges Survey, total depth 2,705 feet, drilling. Penn Oil Co.'s No. 1 State Land, 1,300 feet west of west line J. C. Darst Survey, 1,300 feet north-south line R. Moss 50 acres, near southeast corner of the J. K. Davis Survey, 2½ miles southwest from Darst Creek, total depth 2,670 feet, coring. L. C. Turman's No. 2 State in the Jacob C. Darst Survey, total depth 38 feet, set surface casing. The Texas Company's No. 8-B C. Knoblock, 1,080 feet northeast line, 150 feet southeast line of 75-acre tract in the J. R. Robinson Survey, location.

Adams Gas Field—Medina County

Witherspoon Oil Co.'s No. 1 Adams, 300 feet from north line, 3,200 feet east line in the P. E. Durst Survey, total depth 2,169 feet, drilling.

Lion-McFadden Pool—Victoria County

Houston Oil Co.'s No. 1 McFadden, 330 feet south, 900 feet east of southeast corner of survey, 1¼ miles southwest of Lion's gasser, 1¾ miles east of The Texas Company's No. 1 McFadden, location. Lion Oil Refining Co.'s No. 2 McFadden, 1,917 feet west of northeast corner, 512 feet at right angles from north line of C. O. Edwards Survey in the M. J. Traviesa Survey, total depth 2,219 feet, drilling.

Pettus Area—Bee County

Buchanan & Ogden's No. 1 Townsite, center of Block 38, Pettus Townsite, total depth 3,915 feet; in sand; set casing.

Cosden Oil Co.'s No. 3 McKinney, 360 feet south line, 800 feet east line of tract in the south John Pace Survey, total depth 3,655 feet, setting 6⅝-inch at 3,648 feet.

Glasscock Brothers' No. 2 Pettus Townsite, center of Block 24, total depth 800 feet; drilling.

Grayburg Oil Co.'s No. 1 J. A. Kimball, center of 189 acres in the Stephen Winship Survey, total depth 3,658 feet; previously reported as a 300-bbl. well, now whipstocking 400 feet off bottom to sidetrack mechanical troubles. No. 1 S. D. Copeland, 150 feet southeast corner of north half of William Sanford Survey in the William Sanford Survey, total depth 200 feet; drilling. No. 2 Kimball, 150 feet each way from southwest corner of 80-acre tract or 2,700 feet to east line, 2,100 feet to south line of survey in the Stephen Winship Survey, total depth 880 feet; waiting on casing.

George A. Henshaw, Jr.'s No. 1 Beck, 150 feet north line, 150 feet west line Lot 2, Hicks-Hall Cotton Subdivision in the M. Urango Survey, total depth 4,200 feet; sand.

Houston Oil Co.'s Townsite, center of Block 21; derrick. Pettus Townsite, center of Block 23, rigging up. Pettus Townsite, center of Block 33, rigging up. Pettus Townsite, center of Block 35, location.

Houston Oil & Refining Co.'s No. 5 McKinney, 150 feet south of south line of Pettus Townsite, direct offset to Houston Oil Co.'s No. 1 Beasley in the G. A. Kerr Survey, total depth 408 feet; waiting on casing.

Edward M. Jones's No. 1 Rapp, 990 feet southeast of NW cor., Section 11 of Ragley Subdivision in the Jose Maria Urangua Survey, total depth 6,062 feet; set whipstock to drill and test sand at 3,084-3,118 feet.

Long & Mimms' No. 1 Billingsley, 155 feet to south and west lines of Billingsley 10 acres out of 150-acre tract in the J. Pointevent Survey, total depth 380 feet; waiting on casing.

Nichols Oil Corp.'s No. 4 Hicks, 550 feet east of west line, 430 feet south of north line of Block 20, 930 feet due south of No. 3 Hicks in the Jose Maria Urangua Survey, total depth 3,750 feet; drilling.

Osage Oil Co.'s No. 1 Maudlin, 155 feet north line, 155 feet east line of east 50 acres of 200-acre tract in the J. Pointevent Survey, total depth 400 feet; setting surface casing. No. 2 Maudlin, 155 feet north line, 505 feet east line of tract in the J. Pointevent Survey; derrick.

Jean Patton's No. 1 Billingsley, 155 feet west line, 2,250 feet south line of Billingsley 30 acres in the B. Q. Hadley Survey; spudded and shut down for fuel.

Ed Price's No. 1 Mrs. Laura E. Weiss, 200 feet out of northwest corner of the B.&B. 640-acre Survey east of Normana, 6 miles west of Blanco Creek in the B.&B. Survey; total depth 4,261 feet; test.

Rio Bravo Oil Co.'s No. 1 S.A.A.P. Ry., 58 feet north of south line, 120 feet west of west line of Block 3, Pettus Townsite in the G. A. Kerr Survey; spudded in. No. 7 S.A.A.P. Ry. center of A. Smalley Survey; total depth 3,850 feet; coring. No. 3 S.A.A.P. Ry. in the G. A. Kerr Survey; location.

Simms Oil Co.'s No. 1 Holzmark, 830 feet from south line, 2,952 feet southwest line of the J. A. York Survey; rigging up.

S. R. C. Oil Co.'s No. 1 B. Hodges, center of Block 37 in the G. A. Kerr Survey; total depth 3,901 feet; drilling plug. No. 1 A. Theis, 2,700 feet north line, 300 feet west line of 782-acre tract in the R. S. Burns, rigging up and drilling water well.

Southerland and others' No. 1 Billingsley, 155 feet south line, 155 feet west line of 40 acres, off end of 150 acres in the B. Q. Hadley Survey; derrick.

Southern Crude Oil Purchasing Co.'s No. 1 M. Dahl, 887 feet from east line, 1,584 feet north line of Mena Dahl 224-acre tract in the George Pagen Survey; total depth 3,700 feet; ratholing.

Swift and others' No. 1 Mauldin, 155 feet north and east lines of 10-acre tract out of the Mauldin west 125 acres in the J. Pointevent Survey; total depth

190 feet; set surface casing; waiting on cement.

The Texas Company's No. 2 J. R. Scott, 200 feet north line, 150 feet west line J. M. Urango Survey; total depth 620 feet; drilling.

Union Production Co.'s No. 10 Ray, 150 feet north, 150 feet east of south corner of Block 240 in the G. Neil Survey; total depth 1,827 feet; shale and lime. No. 11 Ray, 3,200 feet southwest of north corner along northwest line, 300 feet southeast at right angles from northwest line in the R. G. Millican Survey; total depth 3,815 feet; bridged self off; plugging to abandon; blew out 30,000,000 feet gas; hole lost. No. 13 George Ray, 900 feet due south of Union Production Co.'s No. 1 Ray gas well in the George Habbermacher Survey; derrick. No. 15 Ray 150 feet south line, 150 feet east line of southeast corner of Pettus Townsite, offset to Ho. O. Co.'s No. 1 Beasley, total depth 3,918 feet; waiting on casing. No. 16 Ray, 150 feet east of Pettus Townsite, offset to Glasscock's No. 1, Block 41; total depth 3,852 feet; waiting on casing.

Wilson & Hill's No. 1 Roberts, center of Block 16, Pettus Townsite; location; waiting on permit under special ruling.

Lasater Pool—Brooks County

Ed East's No. 1 Garcia, 1,700 feet west, 750 feet south line of north 1,000-acre tract, share A-1, Las Mestena Y Gonzalene tract; total depth 1,109 feet; tested 8,000,000 feet gas 410 pounds pressure; being worked over.

Pettus Pool—Goliad County

Doctor Hewitt and others' No. 1 Ray, 200 feet each way out of southwest corner of B.&B. Survey; total depth 4,103 feet; tested salt water in sand from 4,086-4,103 feet; plugging back.

Cartwright Pool—Live Oak County

Houston Oil Co.'s No. 1 R. Boothe, 3,000 feet west line, 300 feet south line of 822-acre tract in the M. B. Kilvin Survey; total depth 5,257 feet; preparing to set casing on drill stem test from 5,252-57 feet; filled 300 feet oil in 12 minutes. No. 22 Cartwright, 500 feet east of No. 18 in the J. M. Colchado Survey; total depth 3,400 feet; drilling in hard shale.

Agua Dulce Pool—Nueces County

Houston Oil Co. of Texas' No. 1 M. E. Brooks, 330 feet north and east lines of Fractional Section 29, Benton Pasture Subdivision, Los Sauces grant; total depth 4,850 feet; drilling. Saxet Oil Co.'s No. 2 Donnegan, 2,150 feet due south of No. 1 Donnegan, location. No. 6 John Dunn, 600 feet south of No. 5; total depth 3,600 feet; drilling; set 3,500 feet 9⅝-inch casing.

South Texas Production Co.'s No. 1 J. A. Daudermann, 450 feet south-north line, 450 feet west-east line of Block 13, of the SE Section 32, Benton Pasture Subdivision; total depth 400 feet; shut down.

Cole Pool—Duval County

Henne-Winch's No. 1 Rosa Benavides, 175 feet southwest line, 205 feet southeast line Cole Subdivision, Mariano Arispe grant, Block 4, Survey 22, total depth 2,818 feet, sand.

Kohler Pool—Duval County

Humble Oil & Refining Co.'s No. 41 Kohler, 2,970 feet south line, 330 feet east line Survey 165, location.

Simms Oil Co.'s No. 9 Dinn, Survey 143, rigged up, standing.

Schoolfield-O'Byrne—Duval County

C. E. Long and others' (Shell) No. 1 Bishop Duval Land Co., 2,800 feet north line, 160 feet west line, Survey 59, rigging up.

Magnolia Petroleum Co.'s No. 1 Lundell, 450 feet north line, 150 feet east line, SE, Survey 60, total depth 5,335 feet, drilling; No. 1 Hahl-Norton, 885 feet west line, 600 feet south line, Survey 61, location.

Schott Pool—Webb County

George S. Marshall's No. 2 Garcia, 1,170 feet north line, 2,490 feet east line, Survey 458, derrick.

Carolina-Texas Pool—Webb County

O. W. Killam's (Carson) No. 6 Webster, 487 feet north line, 160 feet west line of NW of SE of Survey 684, total depth 2,631 feet, sand.

W. R. Shankle's No. 2 Webster, 1,170 feet west line, 150 feet south line, Survey 684, rigging up.

Washington Texas Oil & Gas Co.'s No. 1 R. O. Barnsley, 325 feet south line, 768 feet east line, Block 16, Survey 268, rigging up.

Cole Pool—Webb County

O. W. Killam's No. 19 Bruni, Adams Subdivision, Mariano Arispe grant, Block 1, Survey 8, drilling; No. 5 Bruni, 270 feet northwest line, 203 feet southwest line, Adams Subdivision, Mariano Arispe grant, Block 26, Survey 8, total depth 2,878 feet, coring.

South Texas Producing Co.'s No. 2 S. Benavides, 250 feet northwest line, 150 feet southwest line, Myrtle E. Hale Subdivision, Mariano Arispe grant, Block 24, total depth 2,700 feet, drilling.

Charco Redondo—Zapata County

C. R. Moore and J. W. Moore's No. 1 Adela G. de Flores, 330 feet northwest line, 330 feet northeast line, E. M. Doty Oil & Gas Subdivision, Block 99, Charco Redondo grant, total depth 150 feet, spudded in, set 10-inch casing at 150 feet, waiting on cement; No. 2 Adela G. de Flores, 150 feet northeast line, 150 feet southeast line, E. M. Doty Oil & Gas Subdivision, Block 151, Charco Redondo grant, total depth 50 feet, standing.

Mid West Public Utilities No. 1 Garcia, 450 feet southwest line, 450 feet southeast line of M. P. de Garza tract, Block 33, Pedernal grant, total depth 1,381 feet, standing.

Jennings-Muckelroy—Zapata County

Alamo Drilling & Leasing Co.'s No. 3 Trevino, 510 feet south line, 150 feet west line, Block 1, Survey 66, total depth 1,220 feet, coring; No. 4 Trevino, 150 feet west line, 150 feet north line, Block 1, Survey 66, total depth 300 feet, drilling.

Nordan & Morris & Grimm & Yakey's No. 1 M. Trevino, 510 feet north line, 150 feet west line, Block 5, Survey 412, total depth 100 feet, resumed drilling; No. 1 S. Bustamente, 990 feet northeast line, 150 feet northwest line, Share 34, Fansler partition, Comitas grant, location; No. 2 C. Bustamente, 150 feet northeast line, 150 feet southeast line, Fansler partition, Comitas grant, Share 33, location.

Grimm & Yakey's No. 1 E. de los Santos, 382 feet southwest line, 150 feet southeast line, Share 7, Fansler partition, Comitas grant, total depth 500 feet, drilling (name changed).

Allied Gas Co.'s No. 3 E. Gutierrez, 4,263 feet southeast line, 750 feet northeast line, Share 4, Fansler partition, Comitas grant, derrick; No. 2 B. M. Trevino, 1,533 feet southwest line, 150 feet northwest line, Block 15, Survey 65, derrick.

W. R. Shankle's No. 3 M. Trevino, 150 feet northwest line, 150 feet northeast line, Block 14, Survey 65, total depth 1,274 feet, sand, waiting on casing.

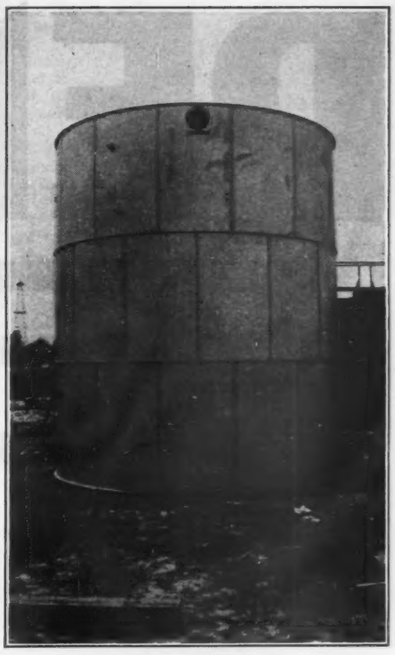
S. R. C. Co.'s No. 1 F. Cuellar, 150 feet northwest line, 150 feet northeast line, Block 7, Survey 65, derrick; No. "B" F. Cuellar, 150 feet northwest line, 150 feet southwest line, Block 7, Survey 65, derrick; No. 5 "B" M. Trevino, 150 feet southwest line, 150 feet southeast line, Block 13, Survey 65, total depth 1,261 feet, drilling.

Winch & Henne's No. 1 Jose Bustamente, 150 feet southwest line, 150 feet southeast line, Share 35, Fansler partition, Comitas grant, total depth 1,285 feet, drilling.

Wicker, Arnold & Ahler's No. 2 M. Garza, 150 feet northwest line, 150 feet northeast line, Block 1, Subdivision Zorro ranch, Comitas grant, total depth 1,360 feet, sand.

Jennings-Cuellar—Zapata County

O. W. Killam's No. "B"-17 Cuellar, 150 feet south line, 150 feet southwest line, Survey 277, total depth 1,000 feet, drilling; No. 1 A. Martinez, 450 feet west line, 450 feet south line, Survey 120, total depth 2,500 feet, drilling; No. 2 A. Martinez, 150 feet north line, 150 feet east line, Block 15, Survey 75, total depth 1,457 feet, drilling; No. 22 "B" Cuellar, 3,640 feet east line, 1,420 feet south line, Survey 277, total depth 1,573 feet, waiting on casing; No. "C"-23 Cuellar, 1,022 feet east of NW cor, 750 feet north line,



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Survey 278, total depth 1,568 feet, sand, waiting on cement.

South Texas Producing Co.'s No. 9 Measles and others, Cerrito Blanco grant, total depth 1,756 feet, drilling.

KANSAS FIELDS

(Continued from Page 70)

Section 33-20-3w, made 600 bbls. in Wilcox sand 3,257-3,305 feet. W. C. McBride, Inc.'s No. 1 Krehbiel, SE cor. SW NE, Section 4-21-3w, has been completed for 500 bbls. in Silicious lime 3,465-70 feet. Sinclair Oil & Gas Co.'s No. 3 Morehouse, SE cor. NE NE, Section 4-21-3w, has been completed for 892 bbls. in Wilcox sand 3,360-95 feet. No. 7 Morehouse, SW cor. NE NE, Section 4-21-3w, made 552 bbls. in Wilcox sand 3,360-89 feet. No. 8 Morehouse, SE cor. NW NE, Section 4-21-3w, made 576 bbls. in Wilcox sand 3,355-92 feet. No. 9 Morehouse, NW cor. NE NE, Section 4-21-3w, had Wilcox sand 3,298-3,325 feet and made 525 bbls. Mid-Kansas Oil & Gas Co.'s No. 8 Voshell, NE cor. SW NE, Section 9-21-3w, made 1,430 bbls. after being deepened from 3,381 feet to 3,384 feet in Silicious lime.

Marion County

Youker and others' No. 1 Holbeck, SE cor. SW NE, Section 10-17-4, has been abandoned at 2,470 feet. General Utilities Co.'s No. 1 Burkholder, CSL N half SE, Section 8-19-3, is dry and abandoned at 2,920 feet. No. 1 Propp, NE cor. SE SW, Section 8-19-4, has been abandoned at 2,795 feet. Skelly Oil Co.'s No. 1 Mehl, NW cor. NE, Section 11-20-4, is a dry hole at 2,649 feet. Empire Oil & Refining Co.'s No. 1 Blakely, NW cor. NE SW, Section 30-20-4, has been abandoned at 2,684 feet.

Morris County

Anderson and others' No. 1 Pape, NW cor. NE SE, Section 15-16-7, has been completed for 1,000,000 feet of gas in sand 450-60 feet.

Morton County

Argus Production Co. made location for No. 1 Erhardt, C NW, Section 28-34-39w. No. 1 William Mangell, C SW, Section 19-33-39w, has been completed for 800,000 feet of gas in sand 2,557-2,752 feet, total depth 2,906 feet. No. 1 Hayward, C NW, Section 31-33-39w, made 13,500,000 feet of gas in sand 2,575-2,785 feet, total depth 2,830 feet. No. 2 Armstrong, C SW, Section 4-34-39w, made 11,116,000 feet of gas from sand 2,550-2,900 feet. No. 1 M. Mangell, C SW, Section 6-34-39w, has been completed for 3,100,000 feet of gas from sand 2,561-2,900 feet. No. 1 Hayward, C SW, Section 9-34-39w, gauged 14,000,000 feet of gas in sand 2,615-2,897 feet. No. 1 Dixon, C SE, Section 18-34-39w, was completed for 4,000,000 feet of gas in sand 2,581-2,900 feet.

Rice County

Rogers and others' No. 1 Gill, SW cor. SE, Section 27-20-10w, is dry and abandoned at 3,341 feet. Miller, Detrich and Graham Brothers' No. 1 Williams, C NE, Section 35-20-8w, has been abandoned at 3,809 feet.

Riley County

General Utilities Co.'s No. 1 Gray, NE cor. SE, Section 30-6-6, is a dry hole at 2,535 feet. Youker and others' No. 1 Thierer, NW cor., Section 20-10-7, has been abandoned at 3,020 feet.

Rush County

Independent Oil & Gas Co. and Wentz made location for No. 1 Kerschner, C SE NE, Section 23-18-19w.

Russell County

Allison & Fitzwilliams' No. 1 Schwartz, NE cor. NW, Section 8-14-15w, is rigging up.

Stevens County

Hardendorf and others made location for No. 1 Persinger, C SE, Section 22-31-38w. Argus Production Co. made location for No. 1 Davis, C SE, Section 14-32-38w. No. 1 W. J. Davis, C SW, Section 31-32-38w, is a location. Location has been made for No. 1 Hoon, C NE, Section 30-32-37w. Location was staked for No. 1 Forward Fee, C NE, Section 5-34-38w. Location has been made for No. 1 Travis, C SW, Section 6-34-38w. No. 1 Ratcliff Fee, is a location, C NE, Section 7-34-38w. No. 1 J. B. Barker is a location, C SE, Section 22-34-37w. Location was made for No. 1 J. S. Hershey, C NW, Section 26-34-37w. Location has been made for No. 1 Kneir, C SW, Section 27-34-37w. No. 1 Redpath is a location, C SE, Section 27-34-37w. Location has been made for No. 1 J. B. Gibbons, C SE, Section 29-34-37w. The rig is up for No. 1 Harrison, C SW, Section 30-34-37w. Location has been made for No. 1 J. Erhardt, C NW, Section 11-35-39w. No. 1 Wiley, C NE, Section 4-35-37w, is also a location. No. 1 Hedrick, C NW, Section 9-35-37w, is a location. Argus Gas Co.'s No. 1 Barrows, C SW, Section 32-34-38w, has been completed for 5,000,000 feet of gas in sand 2,544-2,900 feet. Trees Oil Co.'s No. 1 Meyers, C NW, Section 10-35-38w, made 8,000,000 feet of gas in sand 2,636-2,797 feet. Argus Production Co.'s No. 1 Asher, C NW, Section 7-35-37w, made 4,660,000 feet of gas in sand 2,586-2,902 feet.

Sedgwick County

T. M. Deal's No. 1 Johndro, NE cor. SW SE SW, Section 15-26-1w, is drilling deeper from 2,927 feet.

Sumner County

Washoma Petroleum Co. moved the rig in for No. 1 Stout, NW cor. SE, Section 11-31-2.

Woodson County

Henderson and others made location for No. 2 Wilhite, C N half SW, Section 14-26-13.

OKLAHOMA FIELDS

(Continued from Page 68)

extends production one location. The well is expected to cause considerable new work in the area as several companies have been holding back development until this well was completed.

Sinclair Oil & Gas Co.'s No. 16 Vencl, NW cor. SW SE Section 31-11-2w, is the largest well producing from sand completed in the Oklahoma City Pool to date. It made 37,905 bbls. the first 24 hours. Its first hour's flow was 1,105 bbls. and the last hour's flow was 1,610 bbls.

Coline Oil Co.'s No. 7 Warren, NE cor. SW SW Section 18-11-3w, in the extreme east side of the field, was completed in the Silicious lime and made 8,826 bbls. the first 24 hours. Before being shut in it increased its water flow to 25 per cent. The total depth of the well is 6,496 feet.

In the Nicoma Park area, Mid-Kansas Oil & Gas Co.'s No. 1 Cornwell, SE cor. SW Section 18-12-1w, offset to discovery well in that area east of the Oklahoma City Pool, was preparing to drill the cement plugs at a total depth of 6,346 feet in sandy shale and below the producing horizon of the discovery well. It was drilling deeper at 6,400 feet with nothing showing.

Tom Slick Oil Co.'s No. 1 Crawford, SW cor. NW Section 1-11-3w, was completed for 760 bbls. the first, 667 bbls. the second, 643 bbls. the third, 672 bbls. the fourth and 667 bbls. the fifth It made 8,962 bbls. in 15 hours and was shut in. It was completed through a sand trap and the gas was estimated at 60,000,000 feet.

New Plan in West Chandler

The oil companies in the West Chandler area have agreed to a new proration plan effective July 22. The Magnolia Petroleum Co., Coline Oil Co., Prairie Oil & Gas Co., and Tom Slick Oil Co. have wells in the field with a potential production of 22,150 bbls. a day. These companies have agreed to curtail the production to 25 per cent of potential until August 18 and then prorate all the producing wells in the pool to 100 bbls. a day, per well until October 1, 1930. The proration plan is subject to change at any time according to the crude oil requirements of the State.

Discovery in Kay County

A new wildcat well found oil in northwestern Kay County. Blankenship Petroleum Co.'s No. 1 Randol, SW cor. NW SW, Section 17-27-2, is estimated to be making 11,000,000 feet of gas and spraying considerable oil. The boilers are being moved back to lessen the fire hazard and it has delayed work of completing the well. The gas and oil is coming from what is believed to be the Bartlesville sand at 3,586-93 feet. The well extends production 3 miles northeast of the Wentz Pool, which has wells producing from two horizons at 2,200 feet and 2,900 feet. A mile north the Comar Oil Co. completed a well in the Wilcox sand that made 20 bbls. a day for about a year. It missed the Bartlesville sand. The Blankenship company's well is the second to produce from the Bartlesville sand in Kay County. The other was drilled by the Carter Oil Co. and was No. 1 Hays, in Mervine Pool, about 8 miles east and a mile north of the new well. It was completed in 1914 for an initial production of 3,000 bbls. a day and is still making 300 bbls. a day from the Bartlesville sand. The Mervine Pool in eastern Kay County may be extended by Taylor and others' No. 8 Simons, NW cor. SE NW, Section 11-27-3. A showing of oil and gas was found at 1,245 feet. The 5-inch casing was being landed and preparations were under way to drill the test deeper.

Red Bank Oil Co.'s No. 1 fee, SE cor. SW NE, Section 23-9-24, LeFlore County, had the top of the Viola at 6,048 feet, and was drilling at 6,075 feet in the Viola. It is the deepest test drilled in the county. Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Morgan, NW cor. NE, Section 33-16-1w, Logan County wildcat, had a showing of oil at 5,282 feet in the Bartlesville sand. It was reported to have a bailer of oil an hour at that depth. The crew was straightreaming the casing before drilling deeper.

Oklahoma City's Shut-In Production

The initial production of the shut-in wells in the Oklahoma City Pool that have been allowed to produce for 24 hours or less as of July 26, and are now shut in for the proration period, was 784,976 bbls. The initial production and the approximate dates each well will be opened for its regular producing period follows:

I. T. I. O.:				
Sudik	*1	[30]30,000	.....	
Trosper Hughes	*1	[3]3,000	8- 7-30	
Jones Community	*2	17,164	8- 5-30	
A. Brokaw	4	775	8- 6-30	
N. Emerson	*7	1,687	8- 8-30	
C. Brokaw	3	11,303	8- 4-30	
Theimer	*3	[21]10,540	8- 7-30	
Precure	*1	[18]385	8- 7-30	
Trosper	*11	4,285	8- 3-30	
N. Emerson	*9	3,274	8- 7-30	
L. Jones	*7	2,463	8- 7-30	
M. Uncil	*2	2,050	8- 4-30	
Salsman	*4	[29]225	8-14-30	
M. Fuzzell	3	6,301	8-21-30	
G. Button	5	[9]9,000	8-21-30	
Trosper Park	*6	[5]5,000	8-21-30	
E. Trosper	*1	[16]6,271	8-20-30	
Jones	*10	[2]2,604	8-19-30	
L. Farley	4	7,395	8-18-30	
Mary Sudik	*4	16,199	8-27-30	
Canfield Button	3	[6]6,494	8-28-30	
School Land	*2	[16]4,482	8-27-30	
School Land	*1	[4]4,734	8-27-30	
School Land	*3	[17]7,734	9- 2-30	
S. Peterson	*2	[7]6,327	9- 2-30	
A. Brokaw	*3	2,855	9- 1-30	
C. Trosper	*2	[22]2,385	9- 1-30	
Johnson	*5	2,406	8-31-30	
Farley	*1	6,408	8-30-30	
Mary Sudik	*7	[5]5,169	9- 3-30	
Rensimer	*1	[1]1,930	9-14-30	
M. Sudik	*8	[18]8,916	9-14-30	
H. G. Trosper	*1	[7]7,595	9-14-30	
S. Peterson	*2	[10]7,591	9-12-30	
E. Trosper	*2	[12]185	9-12-30	
Theimer	*5	[2]562	9-12-30	
Spillman	*1	[14]4,937	9-26-30	
Holmes Gray	*1	[24]4,173	9-26-30	
N. Emerson	6	[26]113	9-25-30	
Carrico	*1	[27]7,517	9-27-30	
N. Emerson	11	[25]699	9-27-30	
Jones	*13	[6]6,866	9-28-30	
W. J. Phillip	*1	[20]7,586	9-29-30	
W. Franklin:				
Theimer	*3	16,690	8- 7-30	
Lowery	*8	[10]0,000	8-20-30	
Wright	*1	5,805	8-27-30	
Theimer	*8	[20]0,000	9-29-30	
Cromwell:				
Trosper Park	*17	17,953	8- 7-30	
Trosper Park	*15	5,240	8-13-30	
Trosper Park	*6	11,921	8-30-30	
Trosper Park	*20	48,726	9-22-30	
Trosper Park	*23	[6]6,070	9-22-30	
Trosper Park	*24	[26]3,008	9-23-30	
Sinclair:				
School Land 54	12	[12]2,000	8- 8-30	
School Land 54	8	[10]0,000	8- 8-30	
School Land 54	*3	4,420	8-13-30	
School Land	*4	9,050	8-14-30	
Farley Fuzzell	2	10,865	9- 4-30	
Kinter	10	115	8- 4-30	
Vinci	*5	[25]5,730	8-14-30	
Vinci	*8	[3]3,720	8-14-30	
School Land 67	*2	6,770	8-14-30	
School Land 54	7	[8]0,000	8-30-30	
Vinci	*11	31,290	8-30-30	
School Land 54	*13	7,150	8-20-30	
School Land 54	*10	17,220	8-30-30	
School Land 67	*3	15,940	8-29-30	
School Land 54	*16	[28]8,145	9- 1-30	
Vinci	*9	[7]7,075	9- 2-30	
School Land 54	*6	[12]0,000	9-14-30	
Vinci	*14	[22]2,225	9-13-30	
Vinci	*16	37,905	9-13-30	
Donnell	*1	3,060	9-13-30	
School Land 69	*1	[12]0,570	9- 2-30	
School Land 54	*16	16,545	9- 4-30	
Coline:				
Warren	9	5,544	8- 8-30	
Clauer	1	[1]1,203	8- 1-30	
Warren	8	9,298	8- 4-30	
Olds	*10	[2]2,119	8- 2-30	
Olds	*11	[11]1,284	8-15-30	
Clauer	6	5,596	8-28-30	
Olds	*7	[24]1,763	8-28-30	
Clauer	*10	4,496	9- 1-30	
Clauer	*9	11,948	9-24-30	
Warren	7	8,826	9-25-30	
Slick:				
Hoopes	*7	3,995	8- 1-30	
Dunivan	*1	[13]13,482	8-15-30	
Hoopes	*8	798	8-14-30	
Carter	*1	[9]9,891	8-16-30	
Townsend	*1	[4]4,798	8-16-30	
Classen	*1	[24]1,711	8-29-30	
Foote	*1	[10]0,000	8-27-30	
G. Milner	*1	[9]9,924	9-14-30	
Storie	*1	8,636	9- 3-30	
Crawford	*1	[17]8,962	9-23-30	
Baker	*4	[19]14,681	9-21-30	
Heenan & Co.:				
Cunningham	*2	[12]2,000	8-11-30	
Mid-Texas:				
Community	*1	[21]3,000	8- 6-30	
Tom Slick Oil Co.:				
Hoopes	*8	[29]572	8- 5-30	
Hall & Briscoe:				
Holmes	*1	[3]9,743	7-31-30	
Prairie:				
Hiddleston	9	[19]4,310	8-20-30	
Jack Shaffer et al:				
Jones Community	1	2,345	8-21-30	
Hall & Briscoe:				
Lindsay	2	[27]944	9- 1-30	
Wrightsmith Oil Co.:				
Smith	*1	[4]5,312	9- 2-30	
Phillips Pet. Co.:				
Traders Comprio	*1	4,055	9-25-30	
Total	105	784,976		

*Wells producing from the Simpson sand. All others are producing from the Arbuckle lime.

[1]Estimated. [2]Thirteen hours. [3]Nine hours. 30 minutes. [4]Twelve hours. [5]Five hours. [7]Sixteen and one-half hours. [8]Seventeen hours. [10]Nineteen hours, 45 minutes. [11]Sixteen hours. [12]One hour, 15 minutes. [14]Thirteen hours, 55 minutes. [18]Eleven and one-half hours. [17]Fifteen hours. [19]Three hours. [20]Nineteen hours. [20]Fifteen and three-quarter hours. [21]Eighteen and one-half hours. [22]Six hours. [23]Fifteen hours, 40 minutes. [24]Fifteen and one-half hours. [25]Four hours. [26]Eight hours. [27]Eleven hours, 10 minutes. [28]Seventeen hours, 30 minutes. [29]Fourteen and one-half hours. [30]Ten hours, 15 minutes.

These notations indicate the number of hours the wells produced on their initial production test.

Greater Seminole Production

Production from the Greater Seminole area shows a decline of 30,000 bbls. per day for the week ending July 21, due to the increased curtailment which was made effective July 15. The Seminole Field averaged 166,724 bbls. from 1,888 wells, the same seven days. The daily average gauges from the different pools in the Greater Seminole area were as follows:

Pool—	Wells	Bbls.
Little River	372	30,080
East Little River	84	13,198
Carr City	58	5,061
Maud	138	4,207
Mission	104	9,210
Bowlegs	280	17,419
Earlsboro	290	26,304
South Earlsboro	24	12,617
East Earlsboro	155	17,976
Seminole	266	18,792
East Seminole	33	2,525
Searight	84	9,335
Allen	268	16,713
Asher	26	1,046
West Asher	13	3,531
Konawa	87	24,840
St. Louis	486	26,444
Sasakwa	53	6,096
Total	2,821	245,394

Seminole Oil Shipments

The pipe line companies reduced oil shipments from the Greater Seminole area approximately 20,000 bbls. a day for the week ending July 21. The total shipments for the area were 230,623 bbls. a day. The daily average shipments by companies and tank car deliveries were as follows:

Company—	Seminole (bbls.)	Asher, Pearson, St. Louis (bbls.)	Konawa (bbls.)
Barnsdall	3,750	....	....
Champlin	6,684	....	250
Continental	388	....	....
Consolidated	....	955	....
Cosden	12,994	100	8,297
Deep Rock	3,671	587	....
Empire	4,150	....	....
Gulf	23,696	4,150	882
Independent	....	815	....
Magnolia	8,712	8,061	....
Oklahoma	25,721	....	450
Prairie	15,005	5,461	5,363
Prod. & Ref.	1,730	....	....
Pure	4,115	....	....
Shell	7,514	589	2,994

(Continued on Next Page)

Company—	Seminole (bbls.)	Asher. Pearson. St. Louis (bbls.)	Konawa (bbls.)
Sinclair	28,788	6,840	2,200
Texas	12,132	2,610	3,009
Tidal	9,850	3,901	....
White Oak	1,500	....	....
Total	170,400	34,075	23,405
Tank cars	2,743		
Grand total	173,143		

Oklahoma City Shipments

The shipments of oil by pipe line and tank car from the Oklahoma City Pool show a decline of approximately 68,000 bbls. daily. The total shipments were 610,438 bbls. for the week ending July 14. The daily average shipments were as follows:

Company—	Total shipments	Daily average
Empire	172,417	24,631
I. T. I. O.	40,810	5,830
Magnolia	67,449	9,635
Oklahoma	111,444	15,921
Prairie	98,255	14,036
Sinclair	86,004	12,286
Shell	3,122	447
Tidal	29,846	4,263
Healdton	1,091	156
Total	610,438	87,205

Actual Production

The daily gauges from the Oklahoma City Pool for the seven days ending July 28, showing the date, number of barrels produced each day, number of wells on production, and total number of wells completed each day, were as follows:

Date—	Bbls.	Wells prod.	Total comp.
July 22	105,852	32	362
July 23	81,786	28	363
July 24	64,347	27	367
July 25	81,124	28	372
July 26	62,985	23	372
July 27	61,778	23	373
July 28	63,041	26	375

Caddo County

Magnolia Petroleum Co.'s No. 3 Sames, SE cor. NE NE, Section 35-6-10w, has been completed for 64,000,000 feet of gas in sand 3,406-17 feet. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 1-A Jones, NE cor. SW SE, Section 31-6-9w, has been abandoned at 3,458 feet. No. 1 L. Jones, NW cor. SW SE, Section 31-6-9w, is a dry hole at 3,441 feet. Vaughn & Rush's No. 1 Gregory, SW cor. NE SW, Section 31-6-9w, is pumping 78 bbls. in sand 3,378-85 feet.

Comanche County

Shasta Oil Co.'s No. 1 Rehwalt, SW cor. NW, Section 11-2-10w, has been abandoned at 1,708 feet.

Creek County

Quackenbush and others moved a machine in for No. 1 Graves, C SE SW, Section 23-18-7. J. H. Wright estate's No. 24 Jones, NW cor., Section 24-17-10, is spudding. Skelly Oil Co. moved a machine in for No. 2 Repogle, NW cor. SE SW, Section 10-15-8. National Refining Co.'s No. 8 Futrell, NW cor. NE SE, Section 1-19-9, has been completed for 75 bbls. in sand 2,040-77 feet. H. U. Bartlett's No. 2 Francis, NW cor. NE, Section 20-18-9, is dry and abandoned at 3,035 feet. Eliza Tim and others' No. 1-A Harty, NW cor. NE NE, Section 9-17-11, has been completed for 15 bbls. in sand 1,640-72 feet. Curtis Oil Co. and Margay Oil Co.'s No. 1 Mooney, SW cor. NE, Section 27-16-10, has been abandoned at 3,118 feet.

Grady County

Oklahoma Gas Utilities Corp.'s No. 1 Gann, NW cor. SE, Section 8-5-7w, has been abandoned at 3,210 feet.

Hughes County

Clark & Cowden made location for No. 1 Proctor, NW cor. NE, Section 11-7-8. Mid-Kansas Oil & Gas Co. staked location for No. 1 Street, SW cor. NW SW, Section 15-7-8. Independent Oil & Gas Co. made location for No. 2 Jackson, NE cor. SE SE, Section 17-7-8.

Jefferson County

Bridewell Oil & Gas Co. has cemented surface pipe in No. 1 Seay, NE cor. SE NW NE, Section 10-7s-5w. Farland Oil Co.'s No. 1 Riverbed, SW cor. SE SE, Section 3-7s-5w, is pumping 50 bbls. from sand 1,209-30 feet.

Latimer County

LeFlore County Gas & Electric Co.'s No. 1 McFarrell, SE cor., Section 2-6-22, is drilling at 1,200 feet.

Lincoln County

Deep Rock Oil Corp. and Peerless Oil Co.'s No. 1-A Prowant, NW cor. NE NW, Section 2-16-4, has been abandoned at 4,614 feet. Magnolia Petroleum Co.'s No. 2 Mayer, NE cor., Section 17-14-4, Chandler Pool, has been abandoned at 5,400 feet.

Murray County

Chiefton Royalty Co.'s No. 1 Hendricks, SW cor. SE NW, Section 27-2-2, has been abandoned at 2,370 feet.

Muskogee County

Babcock Brothers' No. 9 N. Barnett, C NW NE, Section 8-15-15, is drilling at 100 feet. A. T. Bechdolt's No. 1-A H. Vanderslice, NE cor. NW, Section 32-15-15, is drilling at 250 feet. A. H. Hanson and others' No. 1 E. Crabtree, CEL SW NW, Section 12-15-18, is rigging up. J. R. Parks' No. 2 P. Roberts, NE cor. NW NW SE, Section 15-15-18, is spudding. Hall and others' No. 1 Harris, SE cor. NW SW, Section 8-15-19, is drilling at 760 feet. A. Degan and others' No. 1 G. L. Kerr, NW cor. NE NW, Section 18-12-19, is spudding. John Aggas' No. 5 M. Hawkins, SW cor. SE SE, Section 28-16-15, is dry and abandoned at 1,632 feet. Taylor & Geiger's No. 3 D. Tucker, NW cor., Section 16-15-15, has been completed for 250,000 feet of gas in sand 770-820 feet.

Oklahoma County

Hall & Briscoe's cellar is dug for No. 7 Holmes, NE cor. NW SE, Section 10-11-3w, Oklahoma City Pool. Tom Slick Oil Co.'s No. 1 Dean, SE cor. NE SW, Section 10-11-3w, is a cellar. Indian Territory Illuminating Oil Co. has the cellar dug for No. 1 C. Funk, SW cor. SE NE, Section 11-11-3w. No. 2 Huffman, NW cor. SW, Section 14-11-3w, is a location. The cellar has been dug for No. 7 Oklahoma State, NW cor. SE NW, Section 36-11-3w. Tom Slick Oil Co. and Atkinson's No. 1 Dunivan, SW cor. SE NW, Section 1-11-3w, made 16,741 bbls. in sand 6,390-6,454 feet. No. 1 Milner, SE cor. SW NW, Section 1-11-3w, has been completed for 13,954 bbls. in Arbuckle lime 6,508-15 feet. Indian Territory Illuminating Oil Co.'s No. 3 Knox, SW cor. NE SE, Section 14-11-3w, made 10,431 bbls. in sand 6,388-6,470 feet. No. 2 E. Trosper, SE cor. NE NE, Section 14-11-3w, has been completed for 2,396 bbls. in sand 6,245-6,508 feet. No. 1 Hugh Trosper, SW cor. NE NE, Section 14-11-3w, made 10,935 bbls. from sand 6,420-95 feet. Coline Oil Co.'s No. 8 Clauer, NE cor. SW SE, Section 25-11-3w, had sand 6,580-6,622 feet and made 1,334 bbls. Indian Territory Illuminating Oil Co.'s No. 3 Peterson, NE cor. SE SW, Section 25-11-3w, flowed 15,891 bbls. from sand 6,320-6,675 feet. No. 4 Peterson, SE cor. NE SW, Section 25-11-3w, flowed 5,854 bbls. from sand 6,345-6,600 feet. Sinclair Oil & Gas Co. and Independent Oil & Gas Co.'s No. 1 School Land No. 69, NE cor. SW, Section 36-11-3w, made 25,025 bbls. from sand 6,585-6,676 feet. Sinclair Oil & Gas Co.'s No. 6 School Land No. 54, SE cor. NW NE, Section 36-11-3w, has been completed for 6,105 bbls. in sand 6,450-6,670 feet. Indian Territory Illuminating Oil Co.'s No. 3 Oklahoma State, SE cor. NW, Section 36-11-3w, made 18,612 bbls. from sand 6,570-6,665 feet. No. 4 Oklahoma State, NE cor. SE NW, Section 36-11-3w, flowed 15,656 bbls. from sand 6,520-6,620 feet. Coline Oil Co.'s No. 7 Warren, NE cor. SW SW, Section 18-11-2w, made 8,826 bbls. in Arbuckle lime 6,050-6,496 feet.

Mid-Kansas Oil & Gas Co. and others' No. 1 Trosper-Browning, SW cor. NW NW, Section 18-11-2w, made 1,765 bbls. in Arbuckle lime 6,066-6,443 feet. Indian Territory Illuminating Oil Co.'s No. 3 Canfield-Button, NW cor. NE SW, Section 19-11-2w, made 8,173 bbls. from Arbuckle lime 6,035-6,370 feet. No. 2 Farley-Fuzzell, SW cor. SE NW, Section 19-11-2w, has been completed for 24,850 bbls. in Arbuckle lime 5,965-6,335 feet. Sinclair Oil & Gas Co.'s No. 9 Vencl, NW cor. SW SE, Section 31-11-2w, made 37,475 bbls. in sand 6,440-6,595 feet. No. 14 Vencl, NE cor. SE SE, Section 31-11-2w, has been completed for 10,855 bbls. in sand 6,390-6,543 feet. Indian Territory Illuminating Oil Co.'s No. 8 Sudik, NW cor. SE SW, Section 31-11-2w, flowed 15,074 bbls. from sand 6,425-6,660 feet. No. 9 Sudik, NE cor. SE SW, Section 31-11-2w, made 16,006 bbls. from Wilcox sand 6,442-6,603 feet. Indian Territory Illuminating Oil Co.'s No. 11 Jones, SW cor. SE NW, Section 31-11-2w, has been completed for 14,764 bbls. in sand 6,430-6,648 feet.

Okfuskee County

Sunray Oil Co. and others 'No. 2 Wilson, NE cor. NW SW, Section 22-12-11, is rigging up to deepen. Champlin Oil & Refining Co. has the rig up for No. 1 Bell, SW cor. NW NE, Section 23-10-11. Atlantic Oil Producing Co.'s No. 2 Brook, NE cor. SE SW, Section 36-12-10, has been completed for 385 bbls. in sand 3,053-66 feet. Eagle-Picher Lead Co.'s No. 1-A Sullivan, C SE, Section 8-12-12, has been completed for 10 bbls. in sand 1,500-38 feet. The Prairie Oil & Gas Co.'s No. 1 Andrews, SE cor., Section 5-13-10, has been abandoned at 3,418 feet.

Okmulgee County

Tiffany Oil Co.'s No. 2 Chambers, NE cor. SW SE, Section 25-16-11, has been completed for 30 bbls. in sand 1,709-75 feet. Hensley and others' No. 1-A Sneed, SW cor. SE NW, Section 26-15-12, made 1,250,000 feet of gas in sand 1,843-62 feet. C. Peterson's No. 3 E. Ware, C NW SW, Section 9-15-14, is an old well which has been deepened and completed for 7 bbls. in Wilcox sand 2,329-40 feet. Denton & Marshall's No. 1-A Z. Colbert, SE cor. NW SW, Section 14-14-14, made 170 bbls. in sand 1,745-75 feet. Claypool and others' No. 1 Banks, NE cor. NW SE, Section 5-13-12, has been abandoned at 1,030 feet.

Osage County

Continental Oil Co. and others moved a machine in for No. 5, SW cor. NE SE, Section 5-23-9. The Prairie Oil & Gas Co. made location for No. 7, SE cor. NE NW, Section 31-25-8. Peters Petroleum Corp.'s No. 7, C NW, Section 27-27-11, has been completed for 12 bbls. in sand 1,717-33 feet. Vacuum Oil Co.'s No. 6, NW cor. SE SE, Section 15-26-6, made 125 bbls. in sand 2,941-3,000 feet. Utilities Production Co.'s No. 22, SE cor. SW NW, Section 6-26-7, has been completed for 6,500,000 feet of gas in sands 1,353-58 feet and 1,370-85 feet. The Prairie Oil & Gas Co.'s No. 5, SE cor. NW NE, Section 31-25-8, has been completed for 50 bbls. in sand 2,424-38 feet. Indian Territory Illuminating Oil Co.'s No. 432, NE cor. SE NE NE, Section 6-25-11, made 1,500,000 feet of gas in lime 1,884-1,904 feet. The Texas Company's No. 2, SW cor. NW NE, Section 13-24-8, has been completed for 15 bbls. after deepening from 2,621 feet to 2,643 feet, then plugging back to 2,636 feet. Indian Territory Illuminating Oil Co.'s No. 2, SE cor. NE NE, Section 14-23-8, made 135 bbls. in Silicious lime 2,436-42 feet.

Pawnee County

Nadine Oil Co. has built the rig for No. 6 Martin, CNL SW NE, Section 7-20-8. Union Oil & Mining Co.'s No. 1 Bayless, NE cor. SW NE, Section 30-20-9, is dry and abandoned at 2,385 feet.

Payne County

The Prairie Oil & Gas Co. and others' No. 1 Rule, C NW NE, Section 8-19-1w, Orlando Field, has been completed in Simpson sand 4,859-64 feet for 1,802 bbls. Skelly Oil Co.'s No. 1 School Land, NE cor. SE SW, Section 16-19-5, is rigging up to deepen from 3,834 feet.

Pontotoc County

Empire Oil & Refining Co.'s No. 1 Malloy, NW cor. SW NW, Section 30-5-5, Bebee Pool, is a rig under construction. Reiter-Foster Oil Corp. is erecting the rig for No. 1 Hightower, NW cor., Section 5-4-5. Clark & Cowden made location for No. 1 Brown, NE cor. SE NE, Section 12-4-7. Magnolia Petroleum Co. and Twin State Oil Co.'s No. 1 Kilcrease, SW cor. NE NE, Section 8-5-6, has been completed as a dry hole at 3,513 feet. Homaokla Oil Co. and Sunray Oil Co.'s No. 9 Richie, SE cor. SW SE, Section 1-4-7, has been completed for 300 bbls. in sand 1,968-2,008 feet. H. & M. Drilling Co.'s No. 1 Kilcrease, SW cor. NW NW, Section 7-4-8, made 200 bbls. in sand 1,990-2,002 feet.

Seminole County

Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Alexander, SE cor. NE SE, Section 36-10-5, Earlsboro area, is dry and abandoned at 4,322 feet. Moore and others' No. 1 Earlsboro Townsite, Block 21, Lot 14, SW cor. NW, Section 8-9-5, has been completed for 360 bbls. in sand 4,355-62 feet. Amerada Petroleum Corp.'s No. 3 Grounds, NE cor. NW NW, Section 23-9-5, has been completed for 1,800 bbls. in Wilcox sand 4,202-18 feet. Mid-Continent Petroleum Corp.'s No. 1 Harjoche, NE cor. SW, Section 17-6-6, Konawa Pool, is dry and abandoned at 3,030 feet. Hilton Phillips and others' No. 4 Hyde, NE cor. SW NE, Section 20-6-6, made 4,335 bbls. in sands 2,909-35 feet and 2,960-76 feet. Burke-Greis Oil Corp.'s No. 2 Caesar, NE cor. SW SW, Section 21-6-6, has been abandoned at 2,910 feet.

Stephens County

Pelwin Oil Co.'s No. 1 Taf Perdy, NW cor. NE NE, Section 3-1s-9w, has been abandoned at 2,513 feet.

Tulsa County

Basinger and others' No. 1-A Fox, NE cor. SW SE, Section 14-16-13, is dry and abandoned at 1,587 feet.

Wagoner County

Secrest and others' No. 1 L. Barnett, SW cor. NW, Section 34-17-16, is spudding. Knox & Shouse's No. 3 Barnett, NW cor. SE SE SE, Section 12-16-15, is rigging up. Peterson & Young's No. 1 K. Holden, NW cor. SE SW, Section 13-16-15, has been completed for 2,500,000 feet of gas in sand 990-1,000 feet. Price and others' No. 1-A M. Vernor, NE cor., Section 16-17-16, is dry and abandoned at 830 feet. Bryan Petroleum Co.'s No. 2 L. Jackson, NW cor. SW, Section 34-17-16, has been completed for 1,784,640 feet of gas in sand 910-19 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 79)

north line to 2,200 feet from the north line.

Landreth Production Corp.'s No. 1-B State, SW cor. NW, Section 33-18-38, cemented 9⅝-inch at 2,755 feet in brown lime. It bottomed salt at 2,520 feet and topped brown lime at 2,754 feet. Same company's No. 1 State, SW cor. SE, Section 7-18-38, is drilling at 3,675 feet in anhydrite and black shale.

Midwest Refining Co.'s No. 8 State, C NW NW, Section 4-19-38, cemented 9⅝-inch at 2,798 feet, and its No. 33 Byers, SE SW NE, Section 4-19-38, is drilling at 3,780 feet in gray lime. It had a hole full of salt water at 3,720-25 feet. Same company's No. 33 State, SE SW NW, Section 4-19-38, is drilling at 2,085 feet in salt. Top of salt was at 1,568 feet. Its No. 4 State, NE NW SE, Section 4-19-38, has rig on the ground, and its No. 26 State, C SE NW, Section 4-19-38, cemented 12½-inch at 253 feet and is rigging up rotary. Midwest's No. 3 State, NW NE SW, Section 4-19-38, is drilling at 2,765 feet in anhydrite and red rock. It topped salt at 1,627 feet and bottomed it at 2,565 feet. Its No. 26 State, C SE SE, Section 4-19-38, is drilling at 2,955 feet in anhydrite. Bottom of salt was at 2,560 feet. It had shows of gas at 2,835, 2,840, 2,890 and 2,905 feet.

Show of Gas

Ohio Oil Co.'s No. 2 State-Northrup, C SE SE, Section 32-18-38, is drilling at 2,788 feet in anhydrite and had a show of gas at 2,785 feet. Its No. 3 State-Northrup, NE cor. SE, Section 32-18-38, is drilling at 3,120 feet in anhydrite and lime, and its No. 4 State-Northrup, NW cor. SE, Section 32-18-38, is rigging up rotary.

Shell Petroleum Corp.'s No. 1 Berry, SE cor., Section 31-18-38, is rigged ready to spud, and its No. 2 State, NW SW NE, Section 32-18-38, is drilling at 3,752 feet in lime. Its No. 3-A State, SE cor. NE, Section 32-18-38, cemented 9⅝-inch at 2,755 feet, and its No. 4 State, SW cor. NE, Section 32-18-38, is rigging up rotary. Its No. 2 McKinley, SW cor. SE, Section 19-18-38, is drilling at 102 feet in red sand, and its No. 3 McKinley, SE cor., Section 19-18-38, is building rig. Its No. 4 McKinley, SE cor. SW, Section 19-18-38, is rigging up rotary. Skelly Oil Co.'s No. 1 Fowler, NW cor., Section 31-18-38, has rig completed. Sun Oil Co.'s No. 1 McKinley, C NE NE, Section 5-19-38, is drilling at 3,840 feet in an-

hydrite and lime. It had gas at 3,670 feet and an increase at 3,692 feet.

Texas Production Co.'s No. 1-C State, NE cor., Section 25-18-37, is drilling at 3,970 feet in lime, and its No. 1 McKinley, NE NW SW, Section 4-19-38, is bottomed at 2,867 feet and fishing. It had shows of gas at 2,805, 2,810 and 2,867 feet. Same company's No. 1 Selman, NW cor. SE, Section 15-19-38, the most southerly drilling well, is drilling at 3,555 feet in anhydrite and lime. It had water and a show of oil at 3,255-60 feet and a show of gas at 3,293 feet.

Eunice Area—Lea County

Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, is drilling at 3,190 feet in lime and anhydrite, and Tidal Oil Co.'s No. 1 Colman, SW cor. NE, Section 17-21-36, is drilling at 3,430 feet in anhydrite and lime. George F. Getty, Inc.'s No. 1 State, NE cor., Section 19-21-36, is rigging up rotary, and Continental Oil Co.'s No. 1 Meyer, SW NW, Section 28-22-36, is sidetracking at 3,655 feet.

Cooper Area—Lea County

Texas Pacific Coal & Oil Co.'s No. 5-A State, NE, Section 20-23-36, is bottomed at 3,599 feet in lime and fishing for rock bit.

Jal Area—Lea County

Midwest Refining Co.'s No. 34 Farnsworth, SE SE, Section 13-26-36, is bottomed at 3,125 feet in lime and straight-reaming. It had a show of gas at 3,030-32 feet. Its No. 19 Farnsworth, SW SW, Section 14-26-37, cemented 10-inch at 2,852 feet.

Tatum Area—Lea County

A. D. Morton and others' No. 1 State, C NW, Section 32-11-38, is shut down for orders at 5,275 feet in lime.

Eddy County

Lockhart & Co.'s No. 2-X Parke, NW NW, Section 23-17-30, Maljamar area, is straightreaming to 2,900 feet. It had oil at 2,820-30 feet. Flynn, Welch & Yates' No. 58 State, SW, Section 19-18-28, Artesia area, is drilling at 600 feet. George F. Getty, Inc.'s No. 5 Dooley, SE NW, Section 23-20-29, Twin Mounds, is drilling at 125 feet in the red beds.

Sandoval County

Mayflower Oil & Gas Co.'s No. 1 Marion, NE SE, Section 23-20n-2w, is reported abandoned at 2,060 feet in the upper Mesa Verde. It had a few oil and gas shows, but none commercial.

Torrance County

The J. B. Witt Oil & Gas Co.'s No. 1 Kutchin, SE SW, Section 12-7n-7e, is drilling below 1,000 feet in black shale. H. L. Williams and others' No. 1 State, NE cor., Section 16-8n-10e, is reported shut down at 1,650 feet in gravel.

San Juan County

Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, is drilling below 1,800 feet, and Dorothy Oil Co.'s No. 2 Goede, NW SE, Section 29-30-9, Blanco district, is drilling at 1,800 feet. San Juan Leasehold Co.'s No. 3 Bowman, NW NE, Section 30-30-15, is drilling at 2,650 feet after cementing 5⅛-inch at 2,430 feet.

Luna County

Angelus Oil & Mining Co.'s No. 3 State, NW SE, Section 20-21-10w, is drilling at 5,235 feet in the Pennsylvanian formation with a slight show of gas.

COLORADO

Bent County

Continental Oil Co.'s No. 1 Pipe Springs, NE cor. SE, Section 27-27-49, a test of the Pennsylvanian formation, has been plugged and abandoned at a total depth of 6,084 feet. At this depth it was in a conglomerate and had 2,500 feet of salt water standing in the hole. The well spudded in June, 1928, and found the red beds at 1,165-3,700 feet. At around 5,900 feet it cut 80 feet of granite wash and then went back into lime. The appearance of lime under the granite wash was considered very important as in several other tests in southeastern Colorado and northwestern New Mexico this formation had been identified as the true granite and drilling had stopped.

Huerfano County

The shallow well being drilled by the Ojo Exploration Co. in Section 5-29-69, near the Ojo oil seep to study the source of the oil and its significance, was deepened 6 inches to 152 feet. The hole is showing live green oil and it is believed it can produce from 4 to 5 bbls. a day. The formation is streaked with lime and shale and it is now believed it is in the Timpas of upper Cretaceous age. A core barrel is to be run to obtain a better sample and to determine the dip. Midland Petroleum Co.'s No. 1 Campbell, NE SE, Section 4-29-69, a test to the Dakota series, is bottomed at 230 feet and underreaming 15½-inch to shut off water.

Baca County

A. R. Jones Oil & Operating Co.'s No. 1 Boice Cattle, NW NE, Section 23-34-42, Miles Camp structure, is drilling below 1,875 feet.

Douglas County

Perry Park Oil Co.'s No. 1 Cannon, SE NW, Section 11-9s-68, Perry Park district, is drilling at 1,220 feet in the Pierre shale. A show of gas was encountered at 950 feet. Several major companies have spreads around this test which will go through the Pierre shale to the Niobrara. W. L. Christiana, formerly chief geologist Continental Oil Co., is in charge.

Washington County

Middlemist Oil Co.'s No. 1 Middlemist, SW SE, Section 14-4s-56, is shut down at 1,200 feet to install gas engine. It is bottomed in blue shale.

Morgan County

Indian Territory Illuminating Oil Co.'s No. 1 State, NE NE, Section 16-1n-57, Fort Morgan anticline, is drilling at 2,400 feet, just about at the depth at which the Hygiene is expected. This will be the first definite marker to be encountered.

Arapahoe County

McDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, is bottomed at 5,692 feet and waiting for 4¾-inch.

Park County

South Park Oil & Gas Co.'s No. 1 Eshe, SE NW, Section 5-9s-76, Muleshoe Dome, is drilling at 200 feet with 16½-inch cemented at 140 feet. South Park Oil Co.'s No. 1 Milligan, NE SE, Section 13-8s-76, Jefferson district, is preparing to cement 10¾-inch at 790 feet several feet in a hard crystallized clay which the company's geologist identifies as the caprock over a sand in the Hilliard formation. This sand is expected within 30 to 40 feet and is the first objective. It correlates with the Frontier of Wyoming.

Archuleta County

Standard Oil Co. of Colorado's No. 1 Fitzhugh, SE SW, Section 34-33n-1e, Chromo Dome, set 12½-inch at 110 feet. The Sundance is the objective.

Garfield County

Fulton Petroleum Co.'s No. 1 Smith, NE NW, Section 8-8s-102, Garmesa Dome, commenced spudding on July 16. This well is close to a big gasser drilled by the Sun Oil Co. several years ago and abandoned. The Argo company has been drilling for some time on the High Line structure near Grand Junction. It is identified with the Midwest interests.

Mesa County

Argo Oil Co.'s No. 1 Hoel, NE cor., Section 23-8s-104, High Line, is underreaming 6¼-inch at 2,765 feet. Total depth is 3,000 feet. The hole was through the Dakota at 2,800-40 feet and will test the Lakota and Sundance. It has had good showings of oil and gas.

Montezuma County

Mesa Verde Ranch Co.'s No. 2 Haller, SW NW SE, Section 33-36n-14, near Mancos, is drilling at 160 feet. The location is three-fourths of a mile southeast of No. 1 Haller, a well drilled for water which had gas in the Muddy sand at 740 feet.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, is bottomed at 5,075 feet and circulating to free the 6¼-inch. It is still in the brown shale of the Green River formation. Another sand was cut at 4,990-5,010 feet. Brigman Petroleum Co.'s No. 3 Patent, NW NE NE, Section 31-2n-102, Rangely Dome, is standing at 670 feet.

Moffat County

The Craig structure, 3 miles south of the town of Craig, is being leased up, the Texas Production Co., the Midwest Refining Co. and the Ohio Oil Co. having

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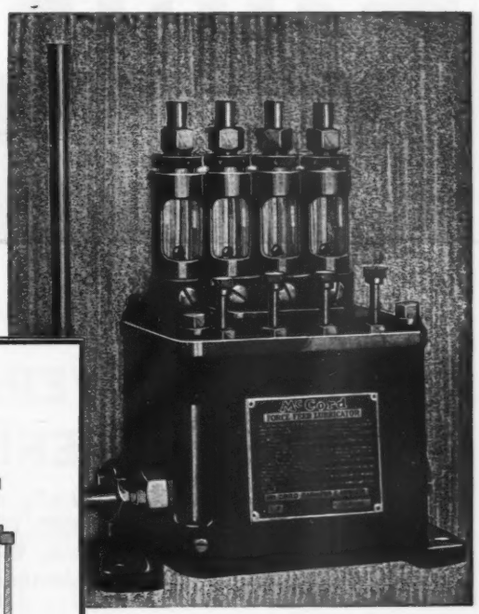

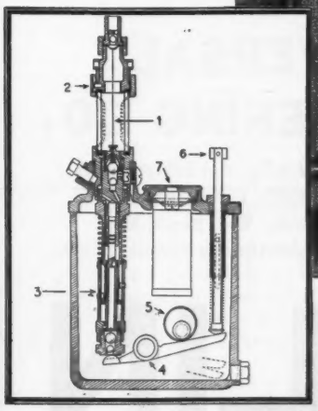

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obtained most of the acreage. The Ohio company was reported last week to have closed a deal on 400 acres supposedly on top. The top of the structure, which has been known for some time but which has never been drilled on account of the depth to the Dakota, is believed to lie in Section 8 and 9-6n-91. The bringing in of a gas well by the Midwest Refining Co. on Bell Rock in formations which are eroded at Iles and Moffat, is the cause of the present interest. Midwest Refining Co.'s No. 24 Hannewalt, SE SE, Section 4-6n-92, the discovery well on Bell Rock, is still bottomed at 2,908 feet and cleaning out. It has had pipe trouble at this depth which is just below the sand which gauged 32,000,000 feet of gas per day. The Texas Production Co.'s No. 12 Knowlton, SW SE, Section 33-5n-91, Moffat Dome, is drilling at 4,296 feet. Mountain Fuel Supply Co.'s No. 1 Lasher, NE NE, Section 25-12n-101, Bartram Dome, is plugging off water at 2,168 feet preliminary to completing as a gas well. Same company's No. 1 Musser, C NE, Section 5-11n-97, Powder Wash, recemented 15½-inch at 1,240 feet.

Routt County

Texas Production Co.'s No. 7 Quaintance-Hocking, NE SE, Section 18-6n-86, Tow Creek, is running 8⅝-inch at 2,710 feet.

Jackson County

Producers & Refiners Corp.'s No. 1 Hendershot, SE NE, Section 2-6n-81, Pole Mountain, is drilling at 4,219 feet in shale. The sand at 3,955-4,120 feet showed considerable gas through the water. The formation is not identified, but one guess is that the hole entered the Greenhorn lime at 4,120 feet. Midwest Refining Co.'s No. 21-X Rich, SW NW, Section 9-6n-80, is drilling at 4,390 feet in sand and light gray shale.

Larimer County

The Continental Oil Co.'s No. 1 Hoffman, SW NE, Section 23-4n-70, Deininger Dome, is spudding at 40 feet. It commenced spudding July 17. This is to be a Pennsylvanian test. Same company's No. 3 Scott, SW SE, Section 6-9n-68, Wellington Dome, which is being deepened to the Lakota, is drilling at 4,563 feet.

UTAH

Midwest Refining Co.'s No. 31 Pary, SW cor. SE, Section 14-39s-1w, Butler Valley Dome, Kane County, in the southern central part of the State, is pulling pipe to abandon at a total depth of 4,440 feet. It was bottomed in red sand of Pennsylvanian age and had gone through the Kaibab lime, the objective horizon. The objective beds at the outcrops west of Henry Mountain showed oil seeps and saturation, but the test encountered only a few comparatively unimportant shows. The well was drilled for the Utah Oil Refining Co. More than 300 wells have been drilled in Utah scattered through 19 counties, but aside from some gas in Grand and Daggett Counties, and small wells in Washington County, nothing of commercial value has been found. Of the wells drilled 78 were less than 500 feet deep; 131 went to between 500 and 1,000 feet; 63 between 1,000 and 2,000 feet; 40 between 2,000 and 3,000 feet; 18 between 3,000 and 4,000 feet and 7 between 4,000 and 5,000 feet. While there are a number of uncompleted tests in the State, most of them are idle.

IDAHO

The Grand Teton Oil Co.'s No. 1 Blevins, SE, Section 33-5n-44, Teton County, is making hole at 2,780 feet in the Aspen formation (upper Cretaceous) after running 6¼-inch casing to make a water shutoff.

WYOMING

Big Horn County

The Ohio Oil Co.'s oil discovery on the Byron Dome and gas discovery in the Madison lime on the Garland Dome, both in Big Horn County, continued to be the outstanding developments in Wyoming. These, with the coming auction sale of Government leases on the Oregon Basin Dome in Park County and the announcement of the forming of a company to pipe oil from the Big Horn Basin to Laurel and Billings, Mont., served to attract attention again to the black oil fields of the State. The Byron Dome discovery was in the Ohio company's No. 1 Union Gas, NE cor., Section 22-56-97. At a total depth of 5,414 feet, the well was tubed and given a test. It started off at the rate of 1,000 bbls. a day and after pumping for a week had settled to 500 bbls. It will be produced until the tankage is full and then will be shut in. The horizon is the Tensleep of Pennsylvanian age. The oil tested 26 gravity and has less sulphur content than the black crudes in the Oregon Basin and other fields producing from that formation. This structure has been producing gas from higher formations for a number of years and some oil had been developed in shallow formations on the south end, but no important production was encountered until the Ohio well reached the Tensleep. The gas discovery on the Garland Dome in the Madison lime was in the Ohio Oil Co.'s No. 1 Easton, SW NW NW, Section 33-56-97, a joint well with the Utah Southern Oil Co. The gas began showing at 3,750 feet. At 3,887 feet it gauged 58,000,000 feet. Several hundred feet of the Madison remains to be drilled and the gas is being killed to go deeper. There was a slight show of oil at the bottom of the hole and the possibilities of finding production deeper in the lime are considered good. The discovery of heavy gas pressure in the Madison lime is looked upon as one of the most important made in the Big Horn Basin for some time as there are a number of structures throughout that district proven in upper beds where the Madison has never been drilled though it is within reach of the bit. The Producers & Refiners Corp. and the Kinney-Coastal Oil Co. are among the principal owners of acreage on the Garland Dome. These companies have a joint operation in their No. 3 Government, SW NW NW, Section 24-56-98, which had gas in both the Embar and Tensleep, but has been held up at 4,234 feet for many months with numerous troubles which have hindered the sinking of the well to the Madison lime.

Park County

The Producers & Refiners Corp.'s No. 2, SW NW NE, Section 14-48-102, on the Pitchfork Dome, in Park County, a joint operation with the California Exploration Co., subsidiary of Honolulu Consolidated Oil Co., is a small well in the Embar formation, the oil being about 20 gravity and of asphalt base. Drilling is continuing in hopes of increasing the production in the Tensleep and at last reports was making hole at 3,620 feet. This is the second well on the structure, the first being lost before it reached the objective. The 8¼-inch is at 2,584 feet. T. N. Clark's No. 2, NW SE SE, Section 11-49-102, Spring Creek Dome, is drilling at 4,208 feet with 2,000 feet of oil in the hole. It is supposed to be below the Tensleep and headed for the Madison lime. It was temporarily completed last fall as a 75-bbl. well in the Embar, which was topped at 3,635 feet, and the Tensleep at 3,813 feet. The oil was very low gravity, only 16 degrees. Continental Oil Co.'s No. 26 Elk 2, SE NE, Section 24-58-100, Elk Basin, is drilling at 1,515 feet, and Texas Production Co.'s No. 1 Freeman, NW SE, Section 30-51-100, Oregon Basin, is bottomed at 3,488 feet and trying to loosen drill pipe which stuck at 2,350 feet. Midwest Refining Co.'s No. 31 Frannie Oil, SW NE, Section 25-58-98, Frannie Dome, is drilling at 2,640 feet in the Embar with 1,500 feet of water in the hole, and its No. 31 Rosenberg, SW SE, Section 24-58-98, is drilling at 2,055 feet in white sandy clay with 10¾-inch at 2,039 feet.

Hot Springs County

Kirby Creek Oil Syndicate's No. 1, SE SW, Section 22-43-92, Kirby Creek, is reported abandoned at 401 feet. Midwest Refining Co.'s No. 8 Weeks, NW SE, Section 6-44-98, Wagonhound, is bottomed at 2,542 feet and cleaning out. The 8¼-inch was cemented at 2,508 feet. Ohio Oil Co.'s No. 1 Smith, SE NE, Section 9-46-99, Walker Dome, is changing over to rotary at 4,403 feet. It is below the Dakota sands which carried water.

Natrona County

One completion in Salt Creek was reported in the Wyoming Associated's No.

(Continued on Page 212)

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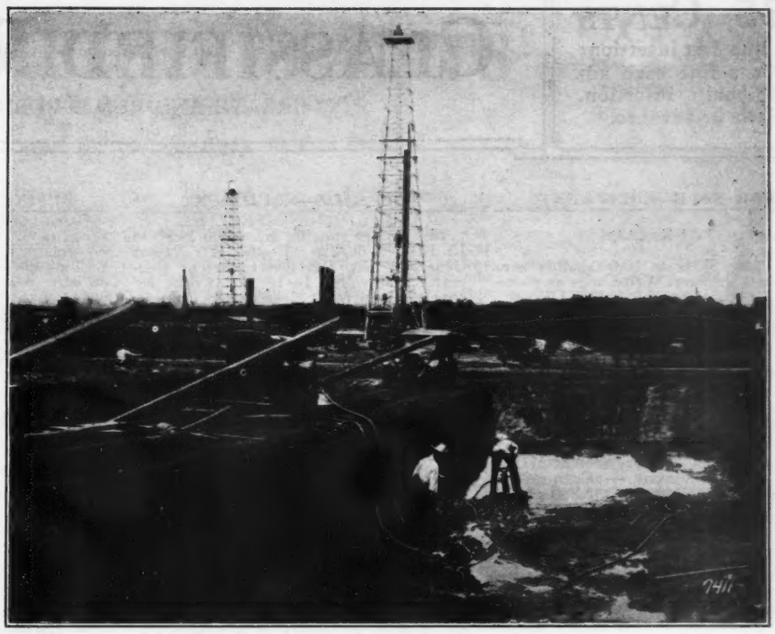

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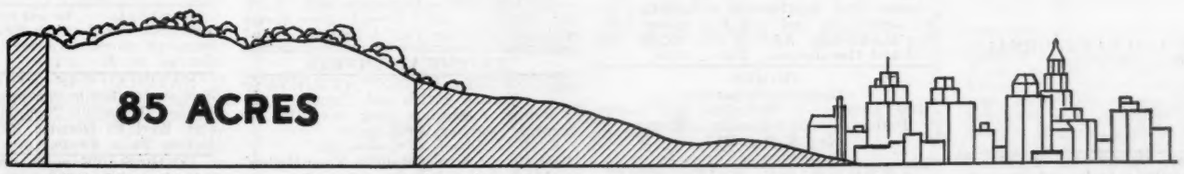

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15—Motors ranging from 200 H.P. to 15 H.P., 3/60/220; 1—100 KW Motor Generator Set, GE direct current Generator 250 volts; 1—15 Ton Crane 50' span, DC current; 2—Skinner Unaflow Engines, direct connected to 2—200 KW Crocker Wheeler generators, 125 to 250 volts, installed only 3 years. Send for complete list of Other Bargains. CONSOLIDATED PRODUCTS COMPANY, INC., 17-20 PARK ROW, NYC. BARCLAY 0600.

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SLATER TURNBUCKLE DERRICK —50 H. P. Boiler—20" and 15½"-casing and drilling tools. Hole 1,290 feet, in good shape to be drilled deeper. Block of acreage available. For full particulars address Atlantic Pipe & Supply Co., P. O. Box 531, Tulsa, Okla., telephone 3-4487 or write P. O. Box 267, Oklahoma City, Okla., telephone 75055.

TANK CARS—FOR SALE

8,000-gallon, for clean service. Inspection at our shop, Houston, Tex. Fifty-four now ready for loading, to any territory, giving free delivery to purchaser. Bargain prices. M. R. DUCEY, RY. CAR CO., Houston, Tex., P. O. Box 223.

BUSINESS OPPORTUNITIES

OIL holds alluring possibilities but SAFEGUARD your future by an investment in World's Most Profitable Natural Industry—SHEEP. Own your own. We care for them without expense to you and guarantee thirty per cent annual returns on your money. 25c brings you full information.
Bow Island Sheep Co.,
303 Alberta Corner,
Calgary, Alta.

SAFE AND CONSERVATIVE

Form your own company to operate for yourself in shallow oil and gas. $5,000 ample capital to start. Several producing sands, 150 to 750 feet. Pipe lines at hand, ready market, good prices. Regulation seven-eighths leases. Proven and semi-proven acreage. Flush production up to 400 bbls. Gas up to 5,000,000. Oil gravity 32 to 34. Clean-cut opportunity. Write H. B. Buddenborg, Parker, Kans.

OIL LOCATED before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

CORE DRILLING CONTRACTOR wants new contract. Depth to 1,200 feet. Best of references. T. H. Chevalier, Box 445. Campbell. Nebraska.

HAVE A BLOCK of twelve hundred acres Anderson County, Kansas. Chance for both oil and gas. Will sell offset acreage or make deal on whole block. Will start 1,300 ft. hole which will test all known sands in that county. Write for details. Box 275, Coffeyville, Kansas.

DESIRE to get in touch with Corporation or individual with capital to invest in royalties live spots Southwest and Eastern Texas. Guarantee resale part of royalties for amount sufficient to clear initial investment and still retain substantial amount of all royalties purchased. Can get correct information on all operations and will buy under drilling blocks only. Address Box E-249, The Oil and Gas Journal, Tulsa, Okla.

HOMES
Business Properties
Real Estate———Securities and Loans
Patton-Lipscomb-Cassidy-Armstrong
Real Estate Bldg.,
San Antonio, Texas.

ATTENTION WILDCATTERS. Know of an excellent structure in Ill. Good indications for oil, open territory. Call or write A. Schneider, Teutopolis, Ill.

BUSINESS OPPORTUNITIES

75,000 ACRES TEXAS LEASES and royalties in 60 counties. Splendid basis for organizing new company or merging. Will accept part stock, some cash. Write or wire owner, P. O. Box 774, 112 Jefferson, San Antonio, Tex.

$8.00 BUYS PART OIL 10 acres Oklahoma County. Big opportunity. Joe Milam, Oil Dept., Oklahoma City, Okla.

EIGHTY ACRES OF LAND on structure in Oklahoma County. All royalty goes, near location. A bargain for few days. D. J. Perry, Edmond, Okla.

MAN OR ORGANIZATION now doing business with Natural Gas and Natural Gasoline Industries to handle line of well known equipment. Write Box E-253, The Oil and Gas Journal, Tulsa, Okla.

WE ARE CONTRACTORS FOR DRILLING coal, clay and other mineral lands with diamond core drills; foundation testing and also specialize in locating favorable structure in which to drill for oil. Mott Core Drilling Co., Business Exchange Bldg., Tulsa, Oklahoma.

MINING PROPERTIES and new inventions inspected, organized and financed under declaration of trust. R. D. Ryan, Lawyer, office Shadyside, Ohio, residence, Chloride, New Mex.

WILL EXCHANGE for producing royalty, large country home, 3 acres land, on outskirts of Illinois city of fifteen thousand; 85 miles from Chicago. Price $45,000.00.
J. P. Catlin, Ottawa, Illinois.

WANTED

WANTED—Well drilled, NE Mo., near Dupo, Ill. Sweetland creek shale formation. Excellent geologist report and map. Spring on this lease has run oily water for thirty years. $100.00 for lease. Write Shelburne Building Service Co., 1561 First National Bank Bldg., Chicago, Ill.

HELP WANTED

WANTED — EXPERIENCED GAS REGULATOR SALESMAN who is anxious to connect with large, long established line. All replies held strictly confidential. State age and experience, both technical and practical, in first letter. Address Box E-230, The Oil and Gas Journal. Tulsa. Okla.

EXPERIENCED PRESSURE STILL OPERATORS wanted for foreign work. One year contract. Three hundred dollars salary. Apartment and transportation furnished. Unmarried men preferred. Give full details, age and experience. Address Box E-241, The Oil and Gas Journal. Tulsa. Okla.

OIL REFINERY Designing Engrs., Const. and Maintenance Engrs., Pipe Line Engrs. and Designers, salary range $250-$500 month, also oil Lab. Chemists and Ch. Engrs., $150-$250. Write or wire, give age, detail exp., references. Interstate Co., Security Bldg., Denver, Colo. Built through 25 years' world-wide service. Largest in West.

CHEMISTS. Draftsmen. Designers, Oil Field Engrs., Geologists, Scouts, Production Men, Oil Refy. Oprs., Repairmen, Engrs., etc. Calls daily. Write or wire, give age, detail experience. Interstate Co., Security Bldg., Denver, Colo. Men-finders built through 25 years' world-wide service. Largest in West.

INCORPORATIONS

DELAWARE incorporator. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.

LANCASTER, ALLWINE & ROMMEL
240 Ouray Bldg. Washington, D. C.

POSITIONS WANTED

LUBRICATING ENGINEER desires permanent position with responsible company. Thoroughly experienced. Two year refinery, seven year industrial oil sales and lubricating engineer. Last position seven years with major oil company. Age 29, married. Write or wire Box E-244, The Oil and Gas Journal, Tulsa, Okla.

GAS ENGINEER WITH 20 years varied technical and practical experience, specializing in high and low pressure distribution design and construction, together with all problems incidental to the sale of gas for domestic and industrial consumption, is desirous of making a new connection, either permanent or temporary. Highest references. Write Box E-243, The Oil and Gas Journal, Tulsa. Okla.

ENERGETIC young man desires position with responsible oil company. Anything considered. Good tractor man. References. Immediate reply appreciated. Write Box E-248, The Oil and Gas Journal, Tulsa, Okla.

PRESSURE STILL OPERATOR

Fifteen years successful experience in design, operation, development and management of pressure stills and all equipment necessary for the processing of cracked distillates. Position must be one of responsibility and one where executive ability is necessary as well as practical knowledge. Address Box E-250, The Oil and Gas Journal, Tulsa, Okla.

GERMAN GEOLOGIST and mining engineer Freiberg. 3 years experience in Colombian oil fields. Free for scientific work in South America. Actually in Colombia. Best references. Address Box E-252, The Oil and Gas Journal, Tulsa. Okla.

GRADUATE GEOLOGIST practical experience wants position with oil or gas company. Paul Farmer, 522 Mt. Vernon Rd., Newark, Ohio.

REFINERY ENGINEER: ten years experience with major refinery and casinghead gas. Design, construct, contract. Desire to connect with firm contemplating a refinery or gasoline plant. Write Box E-254, The Oil and Gas Journal. Tulsa, Okla.

ADDRESSES WANTED

FIVE DOLLAR REWARD for address of N. A. McDonald, cable tool driller, formerly of El Dorado, Arkansas, and Roy Jenkins, oil field worker, formerly of El Dorado, Arkansas. Crawford & Sebastin, Inc., care Hamp Smead, Exchange Bldg., El Dorado, Arkansas.

FOR SALE—MAPS

SOUTHEAST NEW MEXICO
MAPS
Send for list.
THE M. H. HUNTER CO.
Roswell, N. Mex.

OIL DEVELOPMENT and Lease Block Maps any county in Oklahoma. Lease blocks in colors. $2.50 each county. Lindsay Map Company, Franklin Building, Oklahoma City, Okla.

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BULLETIN, containing information of priceless value to responsible parties seeking capital, yours upon request. Free analysis and advice cheerfully given. Moderate rates. Prompt Service. Morris, Financing Specialist, 3608 Warren St., Philadelphia, Pa.

CAPITAL — An experienced, dependable broker will aid in financing propositions of merit. Amster Leonard, East Orange, N. J.

NATURAL GAS or OIL—Either production or distribution properties wanted. Larger the better. Negotiations confidential. Karl F. Divener, 2727 Fifth Ave. Beaver Falls, Penna.

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CLASSIFIED WANTS

ARE RELIABLE BUSINESS AGENTS

WHAT have you to sell or offer? Our readers all turn to the Classified Pages.

LEASES—PRODUCTION

Thousands of acres Oil and Gas Leases to let on Overriding Royalty, West Ky., proven field. Many large companies operating now. Pipe lines building, also royalties and production for sale. W. S. Lowery, Salem Star Route, Marion, Ky.

WESTERN OKLAHOMA oil leases and royalties for sale. Write J. J. Sallaska, Corn, Okla.

HAVE 14,000 ACRES OIL AND GAS LEASES located on main gas pipe line in Mississippi; all regular 88 form, no rental for nine months. Will sell 35 cents per acre. Seventeen wells now being drilled in this territory. Address J. D. Slack, Jr., Box 305, Owensboro, Ky.

FOR SALE: 2,000 Acres Wayne County Oil and Gas Leases. These leases are new and are for a five year term with twenty-five cents rental after the first year. Are well scattered over the County and are a good buy at the price asked. Write A. J. McDowell, Monticello, Kentucky.

FOR SALE: 5,000 acres oil and gas leases on structure, settled production. Royalties and mineral rights on large tract. Complete data furnished on application. W. P. Harley, Bowling Green, Ky.

WILL DEVELOP approved shallow oil or gas acreage. Send full information. "Sunray," 1001 Midland Savings Building, Denver, Colo.

640 acres of land for lease Andrews County, Texas, near Ogden Producer. J. Whitlock, 616 Third St., Alton, Ill.

FOR SALE: TEN YEAR Commercial oil and gas leases in Washita County, Oklahoma, where the play is hot. More than twenty major companies have holdings here. G. L. Romans, Mountain View, Okla.

VAN ZANDT COUNTY, TEXAS
Will sell leases near test well to be drilled. Interest in well and drilling block; royalty under well. Derrick up and machinery party on the ground. Also have producing royalties in the Van Oil Field. Solicit connection with live brokers. Address Cooper, 301 Andrews Bldg., Dallas, Texas.

TERRELL COUNTY, TEXAS, OIL LEASE. 88 Special Texas Producers Form. Clear title, 20-year lease, 15 years more to run. All yearly rentals paid up. No debts against land, never been drilled. Virgin territory. 40 acres. Northwest quarter of northwest quarter of Section 53—D. 6. Two thousand dollars takes it. Mr. C. Christianson, Hotel Atlanta, Seventeenth and Mission, San Francisco, California.

LEASES AND ROYALTIES for sale in less than one mile of well just started. Ground inspection and personal interview invited, no mail order stuff. Lee Bertillion, Mineola, Tex.

FOR SALE—Lease on Red Coulee Structure, Northern Montana and Southern Alberta's new sensational Oil Field. Many new wells to be drilled immediately. Field now in production. Write us for information. Northern Investments, 803 Alberta Corner, Calgary, Alberta.

ECTOR COUNTY leases and royalty, between Ector and Winkler Pools, near Wurtz 4,000 ft. test, which topped the salt at 865 ft., 290 ft. higher than in the Penn Discovery well and higher than any well in that pool. Buy now. Anderson, Linz Bldg., Dallas, Texas.

BARGAIN twenty year leases, large and small, among and adjoining leases picked and bought by major companies along Balcones and Gueydan Fault Zones. A real geology shows formations underlying which produce in three surrounding major pools. Non-forfeiture four payment option terms give you control of price and sale delivery regardless of drilling developments. See maps and detail. R. R. Fisk, Box 1214-L, Wichita Falls, Texas.

10,000 ACRE LEASE BLOCK NEW MEXICO Chaves County. Good geology. Six miles N. W. Roswell, 5-year term, 1/8 royalty, no drilling obligations. Five cents acre annual rental. Price only $1.25 per acre. Wm. Spurch, Story Bldg., Los Angeles.

LEASES—PRODUCTION

IF YOU ARE INTERESTED in buying or developing oil and gas leases in Webster, Hopkins and Muhlenberg Counties, Kentucky, along the biggest gas line now under construction in the world, 1,250 miles long, from Amarillo, Texas, to Chicago, Illinois, write me. Joel Bailey, 310 Mercantile Bank Bldg., Evansville, Indiana.

ROYALTIES—PRODUCTION

WANTED—ROYALTIES
My clients in the East are in the market for from 5,000 to 20,000 acres of low priced non-producing royalties preferably under lease to major companies with favorable possibilities for rapid enhancement in value. Also interested in some real bargains in producing royalties. Give full particulars. Address Box E-238, The Oil and Gas Journal, Tulsa, Okla.

ROYALTY INTERESTS FOR SALE
Texas, Louisiana and New Mexico. Under producing oil properties operated by the Standard, Shell and other major oil companies. Inquiries invited from Royalty Companies, Brokers and Dealers.
J. G. REAVES
Milam Building San Antonio, Tex.

ROYALTIES UNDER OR NEAR DRILLING WELLS in Oklahoma, Kansas, and Texas. Special offerings Big Foot fault zone, Frio County, Texas, near drilling well; also royalties, Lea County; lease Goliad, Karnes, Medina. Lists and maps. James R. Haynes, Grantville, Kansas.

WANT TO FURNISH banks and other first class institutions with active royalty listings in Central Oklahoma. Dr. J. H. Smith, Asher, Okla.

WHEN OTHERS fail try us for the right prices. Jobert Royalty Co., 319 Tradesmen's National Bank Bldg., Oklahoma City, Okla.

ONE HUNDRED THOUSAND ROYALTY ACRES
I own oil royalties in fifty Texas Counties, prices from $1.50 to $5.00 per royalty acre. Correspondence invited from dealers and royalty companies only.
H. J. McMULLEN
FORT WORTH, TEXAS.

ROYALTIES—PRODUCTION

19,822 ACRES OF PERPETUAL ROYALTY in two Texas counties. For only $20 you will receive two perpetual deeds under this entire acreage. We pay recording fees. Location has been made for a well on part of this royalty. Major company 7,000 ft. test is also drilling near by. Write for details.
ROYALTY A MONTH CLUB
CITY NATIONAL BANK BUILDING
WICHITA FALLS, TEXAS

ATTENTION—ROYALTY OWNERS
Investment company has recently raised several hundred thousand dollars for royalty company. Now organizing new company and open to negotiations with owners of royalties who are willing to exchange same on basis of part cash and part stock in the company. This may lead to permanent profitable connection. Eastern representative will be in Tulsa or Fort Worth latter part of month for personal negotiations. Address Box E-239, The Oil and Gas Journal, Tulsa, Okla.

PRODUCING OIL ROYALTY OWNERS: Will buy producing royalty interests anywhere. In replying give complete description and all information regarding property. Also your best price for quick sale. Address all communications to P. O. Box 1257, Fort Worth, Texas.

BEST ROYALTY BUY in Van, Texas, oil field. Perpetual participating deeded royalty interests $100.00 each on tract Northeast of Van on structure near Humble-Carrol big well. Guy J. Stumpff, Consulting Engineer, Van, Texas.

FOR SALE
Producing and non-producing royalties in Southwest Texas.
C. H. Bailey
1712 Milam Bldg.
San Antonio, Texas.

OKLAHOMA OIL ROYALTIES
Royalty Sales Company
Suite 523 105 N. Clark St. Chicago.

TAYLOR LINK POOL
½ undivided interest in 40 acres NW. ¼ of SW. ¼ Section 33, Bl. 16, Pecos County. Less than thousand feet from drilling well. Give offer. All cash or part cash and part oil. Fred N. Johnson, 1249 79th St., Brooklyn, N. Y.

ROYALTIES—PRODUCTION

13 PRODUCING WELLS, 3 others more than six thousand feet deep. Sinclair Vencl lease. From 1/8 acre to 20 acres.
E. D. SMITH CO., INC.
1211 Perrine, Oklahoma City, Okla.

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

ROYALTY BARGAINS in Oklahoma, Lincoln and Pott Counties for sale. American Inv. Co., 201 Elks Bldg., Oklahoma City, Okla.

WE WANT good oil and gas royalties. Send us full information with reports. U. S. Royalties Corporation, C. A. Johnson Bldg., Denver, Colo.

WANTED: WEST TEXAS ROYALTIES. We want cheap wildcat full-participating royalties in West Texas. Williams & Williams Drilling Co., San Angelo, Texas.

100 ROYALTY ACRES under major fault in Colorado County, Texas. Shell Company now completing block after core-testing, seismographing, and torsion-balancing. Spread covers 13 different tracts. $25.00 base. Certificates of title furnished. R. L. Corley, 602 Central Bank Bldg., Dallas, Texas.

PANOLA COUNTY ROYALTY, drilling blocks for sale near Seventy Million foot wet gas well. Address: Smiley, Carthage, Tex.

YATES POOL ROYALTY interest for sale in section 19 and 20, Block 194, Pecos County, Texas. H. T. Swanson, Box 268, Jamestown, N. Y.

LEA COUNTY now has several real GUSHER OIL WELLS. For Sale Lea County perpetual deeded oil royalties under Major Oil Company leases. Also five year state oil and gas leases located ahead of developments. Small investment, easy terms. Monarch Investment Co., Roswell, N. M.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township, plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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RANCH FOR STOCK OR RECREATION
3,606 acres, improved, operating, at base beautiful mountain range, and adjacent to Forest reserve. No trade. Mrs. Shepherd, 847 E. Colfax, Denver, Colo.

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If we do not maintain a classification exactly suited to the type of advertisement you wish to run, we shall be glad to create a fitting one.

FOR SALE OR LEASE 11,322 hectares of land in Republic of Panama, bordering on Gatun Lake of the Panama Canal. Good title. Contains undeveloped coal mine with outcroppings over considerable area. Analysis of coal shows volatile matter, 35.45%; fixed carbon, 49.678%; ash, 5.61% and sulphur .363%. Good plantation land, growing bananas, pineapples and other tropical fruits. Also grazing. Survey of land shows prospect of oil. Adjacent to ocean transportation. For particulars address R. A. Schofield, Box

Hot Weather Increases Consumption

Night Driving Popular in Chicago Territory on Account of the Heat. Buyers More Active But Prices No Stronger

By John B. Waldo

CHICAGO, July 28.—The intense heat has continued for another week with only the most brief of cooler spells and the motorist has been fairly driven to use his car. Night driving is very popular and the result has been an increase in the consumption of gasoline which may be sufficient to make the month better in that respect than July of last year. Both the contract and the spot buyers were active in the market this morning, the spot orders being in nearly every case for rush deliveries. Jobbers have admitted that their tank supplies were close to the bottom and many of them have stated that it was their intention to keep them that way so the orders, especially the spot buyers, are for immediate needs and indicate some increase in the necessities of the distributor.

In spite of the larger gasoline movement there has been no real increase in the strength of prices. The major companies are still holding to their prices of 6½ or 7 cents as the case may be for their spot quotation but are not booking any business to speak of at these prices. The market for spot gasoline as tested by actual sales ranged from 5¾ to 6 cents, the latter price being the top of the market under usual conditions.

Some of the brokers were covering any short sales that they might have left uncovered owing to reports that the Mid-Continent refiners had arranged to care for any distress gasoline that some refiners might be forced to sell and that prices would be generally increased to 6⅛ cents within the next day or two. Jobbers were apparently unmoved by the reports of higher prices from Group 3, and some reliable jobbers in this State stated that they were being quoted 5¾ cents over August by responsible refiners who made good material but were not in the Group.

The Chicago market is low with its quotations from refiners at differential points of 5¾ cents and in some parts of the territory such as Michigan and Ohio of prices of 5½ cents but the Detroit market is in much worse condition as prices have been verified of 8½ cents delivered and it is reported that some gasoline was sold on the basis of 8¼ cents delivered.

Kerosene was quiet, sales being made of a few cars at 3⅛ and 3¼ cents today. There was no change in domestic fuel oils, the market being quiet. Industrial fuel oils are in some inquiry as an occasional plant starts up but generally the demand is reported to have been materially less for July than for June.

Gasoline Consumption

The consumption of gasoline in this territory during July is, according to some of the largest distributors, running just about nip and tuck with July, 1929.

There are quite a number of contracts being closed now. One of the major companies which had some bad luck with its contracts last year and part of the year before has closed up some 75 good contracts with large oil jobbers and expects to materially increase the number before the end of the season. Its contract is described as a 5-cent margin under the service station with allowance for advertising. It is not materially different from that of many of the oil companies, in fact is less liberal in its terms than some but it has gone out and sold the company and its material and services to the jobbing trade. The sales manager for another rival company stated that if he had such a liberal contract his sales force would bring in three contracts a day to which the sales manager of the company which has made the contracts replied that if one of their salesmen brought in three a month they would raise his salary.

Strictly full specification gasoline out of Oklahoma is being held at higher prices by a quarter of a cent than other gasoline of the same class and much motor fuel, some of it from Oklahoma which will not pass the full tests for U. S. Motor grade but which is a good seller nevertheless is being offered for August at 5¾ cents. There is really very little demand for the higher gravities. The antiknock gasoline has taken their place as a premium motor fuel. The Ethyl Gasoline continues to be in excellent demand, most of the refiners reporting that their contract customers are taking the full amounts specified in the contracts and some of them would take more but they are unable to supply any material excess of the regular stipulated quantities.

Conditions in the differential territory to the east of this city are still very unsettled and unsatisfactory. A member of a large jobbing firm located in Detroit, stated he was offered full U. S. Motor gasoline by a nearby refinery at 8½ cents delivered but other refiners with Detroit business claim that such a price is impossible. The parity with Group 3, would be 4.8 cents and they claim that gasoline is not being sold at any such prices even in Detroit and that the regular price for U. S. Motor gasoline delivered in Detroit is 9⅛ cents. However, the city of Detroit business went at the first of the month to a local refiner at a price stated to be equivalent to 4.65 cents. Detroit is hardly a fair case any more than Chicago would be under like circumstances. In fact Detroit is in worse shape so far as maintenance of prices is concerned. There is the local plant and the large Chicago refineries have stocks in Detroit which are delivered to the tankage by water freight at low costs. The refineries at Toledo have a low freight cost to Detroit and the Indian and Lincoln refineries at Lawrenceville and Robinson, Ill., have a low differential so that Detroit and the immediate vicinity is always liable to have a gasoline cost lower than possibly any other city in the country outside of some of the western refining centers.

Natural Gasoline

There has been some demand for natural gasoline chiefly in the BB grade owing to the takings by one large buyer whereas the other demand has been for the A and AA grades.

Kerosene

Kerosene continues to be neglected. Jobbers say that their sales are less than half what they were two years ago. Various systems of lighting but chiefly the installing of the high tension wires has greatly increased the number of electric light users. For tractor fuel many are now selling a good distillate and claim that it gives better service than kerosene and cold mornings the user can add about 10 per cent of gasoline and in this way secure a real peppy mixture. Some refiners have recently speculated a little as to whether it was going to pay them to continue to run kerosene at all.

Furnace Oil

In the domestic furnace oil division there has been very little doing. The representative of one refiner who would like a few more customers for his distillate stated practically all distributors have some form of contract for their requirements over the coming winter. These contracts were with no exception that he was able to discover, based on the average of published quotations at the date of shipment with a maximum and minimum price. He stated that the distributors were preparing for a good business. The spot business continues to be light consisting of a few cars of practically all grades and kinds of furnace oils. The prices in this kind of a market usually remain unchanged and such has been the case in this market. There are a number of large deals either just concluded or to be concluded in the near future for considerable quantities of domestic burner oils to be taken in and stored for the opening of the season. The prices are usually low but not unreasonably so considering all the circumstances. In some instances the buyer has paid a fair price on the basis of the going market in order to secure just the kind of material that is wanted.

Gas Oil

The good zero gas oil is quite firmly held by several refiners who claim that the supply of this material will not be excessive. The gravity is not so essential as the flash, fire odor and color. Prices for a full zero gas oil clean and sweet are firmly held as a rule. The straightrun gas oil is rather quiet as the principal users, that is the gas companies, still continue to hold to their rule of buying only for brief periods. Salesmen continue to devote considerable time to trying to induce the gas company buyers to stock up with gas oil claiming that 2 to 2⅛ cents which is the market today is a good enough price for any gas company and is much less than the prices which gas companies have paid for the oil to fill their storage even in recent years to say nothing of times further back and that the companies are receiving the same old prices for their gas. But the arguments are to no purpose the usual result being that the superior authority is still unable to see the wisdom of larger inventories. The Shell Petroleum Corp. is still quoting 2⅛ cents to the trade and 2 cents to marketers or brokers, and this fact rather fixes the local market. The offerings from the field are quite commonly higher priced for first class material but there are some lots of 30-34 gas oil available at a little less than 2 cents and some West Texas material which can be had at a slight reduction from the Oklahoma price.

Fuel Oils

In the heavy fuel oils, the same old story that has been told for the past five or six weeks or more is being told again for this week. Many plants are closed down, many others working part time or with but a small force. The industrial requirements for fuel oil are not large and the buying is right in line with these reduces nedse. The quietness is increasing rather than decreasing.

Prices for fuel oil show very little change, a good 18-22 sells for close to 50 cents a barrel, the range being from 47½ to 52½ cents. For the heavier fuel oils there is a little demand but the sale of these products is largely a sort of specialty and so far the supply has been in excess of any present demand. The prices at which this heavy, high viscosity oil is selling show that, for it is really a hotter oil and more economical to burn if the concern has the facilities to use the heavy grades of fuel oil. It is quite as much a matter of viscosity as of the gravity and some 12 gravity oil is being shipped here which has a viscosity under 600 at 100.

Lubricants

The consumption of motor lubricants is good while that of industrial lubs is light. Jobbers are ordering as they need the oils and doubtless the smokestack trade is doing the same thing, only their needs are very light right now. There has been little change in refinery stocks and very little new business doing. Prices on the western bright stocks are held at 28 cents and on Pennsylvania bright stocks at 25 cents. Neutrals and steam refined stocks are all quiet and rather easy in tone here. Many of the compounders state that they have enough material bought to last them well into the last half of the year as their buisness the first half of the year did not require as much in volume of the refinery stocks as they figured on. There has been a large sale of what might be called adulterants and substitutes for bright stocks and some refiners have brought out oils of the straight reduced type which are excellent motor oils all tending to reduce the volume of the bright stock consumption.

LA.-ARK. FIELDS

(Continued from Page 72)

100,000,000 feet to the field's total initial open flow capacity. Palmer Corp.'s No. 1 Newberry, SW NE, Section 2-16-6, made 39,767,000 feet at 720 pounds, total depth 2.450 feet; No. 1 N. D. Thompson, SW NW, Section 22-16-6, made 25,956,000 feet at 490 pounds, total depth 2,450 feet. This well, offsetting an old crater, does not show by its "rock" that the crater has lowered pressures much during the past year or so. United Carbon Co.'s No. 1 E. W. Dunning, NE NE, Section 26-16-6, gauged 17,000,000 feet at 558 pounds from 2,440 feet and No. 1 H. L. Thomason, SW SW, Section 2-16-6, gauged 48,132,000 feet, total depth 2,440 feet.

Lion Oil Refining Co. made a 5-bbl. producer of No. 2 Kelly, Section 9-17-14, Champagnolle district of Union County, Arkansas, by deepening it to 3,195 feet. It was completed in April last year as a 7,000,000-foot gasser in the first sand at 2,822 feet. Ohio Oil Co. has made three new locations in Sections 1 and 12-17-14, Letona Syndicate abandoned No. 1 Letona Townsite in Section 35-9-8, White County, as a dry hole at 3,650 feet. Tidal Oil Co. drilling No. 1 Arkansas Timber Co. in Section 3-16-14, Calhoun County, made a third test, at 2,534-49 feet and got the same results as in the other two—salt water. J. G. Marcum's No. 1 McGarry in Section 10-19-4, Ashley County, got salt water at 3,555 feet and plugged back for a retest at around 3,467 feet. E. R. Henderson has made location in the NE SE, Section 26-8-24, Pike County, for No. 1 Tilyou at the village of Delight, 12 miles east of Murfreesboro.

PETROLEUM IN RUMANIA

For those who are interested in the petroleum industry of Rumania the general review of the economic, statistical and juridicial situation in that country published by Mihail Pizanty, editor of the Moniteur du Petrole Roumain, will be interesting. Mr. Pizanty has gathered a mass of information that covers every phase of the industry and as this has been taken exclusively from the review Moniteur du Petrole Roumain, Statistica Miniera and from personal investigations of the author it is considered authentic and complete up to and including the end of 1929.

Copies of the booklet can be obtained from Mihail Pizanty, editor of the Moniteur du Petrole Roumain, 21 Rue Aristide Briand, Bucharest, Rumania, without charge.

Eastern Gasoline Market Unsettled

Despite Record-Breaking Consumption, Reports of Price Cutting Are Still Prevalent. Kerosene Price Reduced

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

...RK, July 28.—A reduction in ...erosene, recovery in the position of the wax and cylinder oil markets, and continued weakness in gasoline characterized the refined products markets in East Coast territory during the past week. The principal price change during the period was a reduction of one-half cent per gallon in the posted price for water white kerosene at refineries, the reduction coming on the heels of continued price cutting by most sellers. The cylinder oil market recovery, which took in several grades, reflected a decided change in sentiment among refineries, and was attributed to the virtual clearance of the distressed stocks liquidation of which has so demoralized the market in recent weeks.

The gasoline market is still in mixed position. Against a record breaking movement into consumption, the market is still honeycombed with price cutting, and unless further drastic reductions in storage stocks are achieved, stability of the present posted price basis is in danger. There are definite indications that the current wave of price shading, however, is due fully as much to overly keen competition as to actual surplus holdings in this area, so early relief in the situation is uncertain.

Large integrated companies, including both those which are battling for a stronger foothold in East Coast territory, and those older factors who are defending their hard won position, are not only competing energetically in the tank wagon and retail markets, but are fighting just as keen a battle in the wholesale market. Thus, the tank car market at the moment appears as badly disorganized as the tank wagon market, with the immediate outlook for both rather problematical.

Tank Car Gasoline

Refiners are holding their posted price schedules at 9 to 10 cents per gallon, but these prices are coming in for general shading. U. S. Motor in tank car lots can be freely bought at 8½ cents refinery terminal, reports of business at 8¼ cents have been confirmed, and rumors of business going through at 8 cents flat are by no means infrequent, although it appears on investigation that this low figure is being done only in isolated instances, and that none of the better known gasolines is involved.

Current movement from refineries is said to be the largest in history for a number of refiners. The East during the past week has suffered from an unprecedented spell of hot weather, and this has made for much more general use of motor cars than usual for this season of the year.

Jobbers are still keeping their storage full, notwithstanding the precarious position of the refinery market, and tank car movement at the plants is said to be exceeding all previous records.

Refiners are booking a steadily increasing volume of premium gasoline business in the tank car market, and this division of the gasoline market as yet remains comparatively free from the price cutting which has characterized the market for U. S. Motor fuel. Refiners are concentrating much of their sales activities of the premium fuels, and are finding a receptive market with little of the sales resistance which characterizes the competition for business on the straight U. S. Motor quality gasoline.

Tank Wagon Gasoline

Consumption in East Coast area has been running at record high levels for the past fortnight, but the market is still unsettled, as to prices.

While the posted price schedules for both tank wagon and service station deliveries remain unaltered, there is a widespread wave of price cutting, involving both the leading brands and the lesser known qualities of motor fuel.

Retail prices in New York City territory are all the way from 7 gallons for a dollar up to about 18 or 19 cents for the leading brands with premium grades available anywhere from 19 to 22 cents at the pump.

While much of the price cutting appears to be centering in the metropolitan area at the moment, reports from the remainder of the territory indicate that this situation is becoming more general in the rush for new gallonage, and the struggle to hold accounts already on the books.

While sentiment in the market is better, due to the better reports concerning surplus holdings, refinery curtailment, etc., no immediate upturn in the price structure is looked for, marketers devoting most of their energies to holding the market at present levels, and reducing price cutting on their brands at retail stations as much as possible under current conditions.

Lubs

The cylinder oil market has shown further improvement in the field this week, and the price pendulum is beginning to swing in the other direction, with fractional price advances noted on several grades. On 600 steam refined, the market is a half cent higher at 18½ to 19 cents per gallon, with 635 and 650 showing corresponding advances at 20½ to 21 cents and 24½ to 25 cents per gallon, respectively. There is still some spot oil of these grades available under these figures, these offerings representing lots picked up from weak holders during the distress selling of the past fortnight.

The market for 600 Pennsylvania flash oil, however, has sagged off a little, with offerings at 28 cents per gallon, 1 cent under previous quotations, with 630 flash showing a similar reduction to 31 cents per gallon. On Warren "E" and Oil City "E" the market holds unchanged at 26 and 25 cents per gallon, respectively. Bright stocks have recovered somewhat, and current quotations are 1 cent per gallon over last week's levels at 33 cents per gallon for light 140-150 and 31 cents for dark 140-150 oil.

With the recovery of the price basis, inquiry has shown a corresponding gain, and a number of export inquiries have reached the market during the week, with quite a good deal of actual business placed during the period. Europe is inquiring for cylinder oils in fairly substantial volume, and other consuming countries are also showing more interest.

Red and pale oils again went through an uneventful week, with a fair movement reported and prices steady and unchanged on all grades.

Petrolatum

Sellers are getting more inquiry for fall and winter deliveries from the domestic pharmaceutical manufacturing trade, and business on export lines is also picking up.

The market is showing a fairly steady undertone with lily white now quoted at 6⅜ cents per pound, an eighth cent per pound over previous quotations, and sellers showing firmer views, with some asking up to 7 cents per pound for this grade. Other grades, however, are unchanged from prices prevailing during the previous week.

Advices from the field indicate that refiners are curtailing their output of petrolatum in line with the general retrenchment policy at refining centers.

Fuel Oil

Marine sales of bunker "C" are reported running well ahead of those at this time last year, and this division of the market holds in steady position. With the bulk of the business under contract for the year, the market is in fairly stable position, and principal sellers are aiding in maintaining a steady market by adhering to posted quotations.

Consumption of fuel oil for industrial purposes is showing the usual seasonal falling off at this time, and this has naturally tended to weaken the situation somewhat. The only effect this has had upon the general price structure, however, has been to cause a little price shading in competitive bidding for term contracts, and some sales of spot oil at slight concessions on the part of one or two of the minor factors in the East Coast market.

Diesel Oil

The market is coasting along, with a good volume of business reaching refiners and sales thus far in the year showing satisfactory gains over comparable 1929 totals.

Refiners report a steady contract movement at $2 per barrel, in bulk at refinery terminals, with spot sales also being put through at the same figure.

Domestic industrial consumption of Diesel oil is also recording steady gains, with refiners attaching more significance to their sales promotion work in this field.

Paraffin Wax

Inquiry has shown considerable stimulus this week, and volume of actual sales has also increased. Business was done during the week on 120-122 a.m.p. fully refined at 3 cents per pound, an advance of an eighth cent per pound over the previous quotation. Other melting points, while unchanged in price, were firm at recent advances, with the outlook favoring a slightly higher basis if refiners maintain their present firm position on spot sales.

Kerosene

Standard Oil Co. (New Jersey), effective July 24, reduced water white kerosene in tank car lots one-half cent to 6¾ cents per gallon at refineries, other sellers following in the reduction. Business has been but moderate in kerosene in recent weeks, and the cut in the posted price basis was necessary to readjust the "official" market to the levels at which some sellers were booking business.

The tank wagon market for kerosene has not as yet reflected the last two cuts in refinery kerosene, which have aggregated 1 cent per gallon. A good movement is reported in tank wagon markets for this season of the year, and it is problematical whether marketers will readjust their tank wagon basis immediately.

Gulf Export Market

A dull market has prevailed on both gasoline and kerosene at the Gulf, with no export cargo business in the open market, although shipments by the large integrated companies for the account of their foreign marketing subsidiaries are running in excess of 1929 totals.

There are two tentative inquiries in the market, which are expected to develop next week. Both are for France, and involve one cargo of 6,000 tons of 64-66 and another of 6,000 to 8,000 tons of the same gravity.

Quiet markets are reported for both Mexican and Venezuelan crudes this week.

Nothing new has developed in the export situation affecting California refined products this week.

Further material gains in export movement of principal refined products was reported locally during the week ended July 19, and it appears that the low prices recently quoted on a number of products have borne fruit in increased buying. Cylinder oil exports in particular showed improvement, exports of these oils accounting for more than 1,600,000 of the 4,505,000 gallons of lub oil exported during the week.

Export movement of naphtha also showed substantial improvement during the period, the total of export shipments being materially swelled by one shipment in excess of 2,400,000 gallons which went out on the Sommerstad for Nyborg.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	July 19	July 12	July 5
Gasoline	590,000	395,000	325,000
Naphtha	3,060,000	585,000	45,000
Kerosene	25,000	155,000	10,000
Fuel oil	936,000	30,000	53,000
Lubricating oil	4,505,000	2,417,000	1,405,000
Petroleum, refined	1,150,000	1,325,000	510,000
	Pounds		
Petrolatum	5,000	150,000	.....
Paraffin wax	950,000	1,805,000	935,000
Refined	25,000	50,000	.....
Scale	330,000	60,000	490,000
Lubricating grease	940,000	825,000	1,225,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended July 19 totaled 1,921,000 bbls., a daily average of 274,429 bbls., compared with 2,324,000 bbls., a daily average of 332,000 bbls. for the previous week and a daily average of 283,786 bbls. for the four weeks ended July 19. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	207,000
Boston	105,000
New York	1,082,000
Philadelphia	387,000
Total	1,781,000
Daily average	254,429
At Gulf Coast Ports—	
Galveston district	53,000
New Orleans and Baton Rouge	48,000
Tampa	39,000
Total	140,000
Daily average	20,000
At all United States Ports—	
Total	1,921,000
Daily average	274,429
Daily average four weeks	283,786

Distribution of total imports is as follows:

Crude	1,209,000
Gasoline	400,000
Gas oil	63,000
Fuel oil	249,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended July 19 totaled 921,000 bbls., a daily average of 131,571 bbls., compared with 451,000 bbls., a daily average of 64,429 bbls. for the previous week, and a daily average of 81,893 bbls. for the four weeks ended July 19. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	303,000
New York	388,000
Philadelphia	230,000
Total	921,000
Daily average	131,571
At Gulf Coast Ports—	
All Ports	None
At Atlantic and Gulf Coast Ports—	
Total	921,000
Daily average	131,571
Daily average four weeks	91,893

Distribution of total California oil receipts is as follows:

Gasoline	921,000

Shipments of refined products from California for East Coast and Gulf ports during the week aggregated approximately 1,500,000 bbls.

Of Interest to Sales Departments

Explain Operation Municipal Service Station at Lincoln

By C. M. Sutherland

Nebraska Independent Oil Men's Association*

The audit of the Lincoln Municipal Coal and Gasoline Department for the year ending April 30, 1930, has just been made public. The municipal filling station, the like of which does not exist in any other city in the United States, showed a decided gain in gallonage of 1930 over 1929. In 1929 the Muny filling station handled 417,147 gallons. But in 1930 it almost doubled to 828,114 gallons. The sale receipts for the period of 1929 was $73,409; for 1930, $143,068. The report of the auditor shows that the gross profit of the Muny station was $31,433 and the net profit $21,057. The operating cost was $10,385.

To figure out this profit of nearly $2,000 a month on the Muny station, the auditor does not take into consideration a score of expenses which every oil jobber in Lincoln has. If all businesses in Lincoln were operated by the municipality there would be a score of industries which would be put out of business.

In the first place, a number of landlords would go begging, for we know the rent paid by various businesses in town is a big income for those who are so fortunate to have the building for rent.

Second, if all businesses were operated municipally, taxes on the property and residences of the citizens would have to be raised so high that it would almost confiscate private ownership. The Muny plant pays no taxes except gasoline tax.

Third, the newspapers would be hard pressed, for Muny enterprises do no advertising.

Fourth, the Community Chest would never make its goal, for Muny enterprises never contribute to the Community Chest.

Fifth, the Chamber of Commerce would have to go out of business because very few Muny employes hold membership in the Chamber of Commerce.

Sixth, various enterprises such as new hotels, the veterans hospital, new churches would be made impossible because the business men of the town are the backbone in raising funds for these public and beneficient purposes.

Lastly, civic clubs and other associations and organizations would be missing because they are supported by the business men of Lincoln.

Finally, the conclusion must be reached that if a Muny operation of coal and gas is right and just and equitable and within the province right of the city to engage in, then every business enterprise is in a like manner subject to municipal operation. In fact, the Supreme Court of the United States has laid down this principle that a city, operating under a municipal charter such as Lincoln, can by a vote of its electorate engage in any business which a majority of the electorate see fit.

Discrimination

On the other hand, the municipal operation of gas and coal is a discrimination against the inhabitants of Lincoln who do not own automobiles. More people wear shoes and clothing and eat bread and have their clothing washed and cleaned than drive motor cars. So if the prime object is to regulate the price and save the people money, the greatest good to the greatest number would be to have a municipal market where vegetables, fruit, groceries and other necessities of life could be sold at cost. A municipal bakery, municipal laundry and cleaning establishment, a municipal printing shop, a municipal barber shop, and, last but not least, a municipal undertaking parlor. Then the citizens could be nourished municipally and finally laid away in a municipal manner. Lincoln would then become a "well laid out city"—ready for burial.

As far as the sale of petroleum products is considered, with 140 filling stations in Lincoln the motorist can rest assured that competition will so regulate the price that motorists can buy, notwithstanding the municipal station, gasoline of any quality or at any figure which the municipal station could offer. Since it was first instituted, it has been a dismal failure.

By the way, the city itself is penalized by its own Muny station on the petroleum products it uses. The county of Lancaster, which buys in tank car lots at wholesale prices, pays less for gasoline than the city of Lincoln with its municipal station. On the 100,000 gallons that the city uses in its various activities, $3,000 or more could be saved by buying as Lancaster County does.

This municipal threat for other industries hangs like a sword of Damocles over the business interests of Lincoln. It is high time that sanity and good judgment prevailed and the city cease and desist forever from engaging in private enterprises.

*Reprinted from Nioma Bulletin.

ILLINOIS HAS LOWEST AND FLORIDA HIGHEST YEARLY TAX ON GASOLINE

The automobile owner in Illinois pays the smallest yearly gasoline tax while those in Florida pay the most, according to data compiled by C. M. Babcock, Minnesota state highway commissioner.

The yearly gasoline tax in Illinois where a 2-cent rate is effective was $7.21 in 1929, while the average in Florida was $35.35. Other states with low gasoline taxes were North Dakota, $9.58; New York, $8.43; Wisconsin, $9.43, and Missouri, $10.15. All these states have 2-cent gasoline taxes except North Dakota, 3 cents. Florida and other states in the southeast have 5 and 6-cent gasoline rates and this accounts for the high yearly total.

Mr. Babcock in his compilation in addition to the state gasoline taxes has averaged the yearly license fees and personal property taxes. In several states where the gasoline tax rate is high the license fees and personal taxes are low. Several states do not make personal property assessments against cars.

The report shows that North Dakota has the lowest license and tax charge per car, the total being $2.16 for the year. Nevada, which has the smallest number of cars, has the largest charge of $82.03. The average total figure for all states was $39.37. Of this sum $29.51 is represented by the license fee and gasoline tax and the remainder by personal property tax.

The following table gives the data by states:

	Number of automobiles and trucks	Average license tax per vehicle	Average gasoline tax per vehicle	Average personal property tax	Average total of all taxes
North Dakota	188,046	$10.58	$9.58	....	$20.16
New York	2,263,259	16.92	8.43	....	25.35
Minnesota	730,399	14.85	12.17	....	27.02
Iowa	784,450	15.19	11.92	....	27.11
Illinois	1,615,088	10.57	7.21	89.37	27.15
Kansas	581,223	9.80	14.06	5.16	29.02
New Jersey	833,332	17.79	12.01	....	29.80
Wisconsin	793,502	14.84	9.43	6.15	30.42
Indiana	866,715	7.21	18.01	5.24	30.46
Oklahoma	570,791	12.20	18.99	....	31.19
Missouri	756,680	12.81	10.15	8.60	31.56
Idaho	118,074	15.14	16.48	....	31.62
Michigan	1,395,102	16.64	15.28	....	31.92
Massachusetts	817,704	8.70	11.93	11.33	31.96
Utah	112,661	7.44	17.57	7.25	32.26
Colorado	303,489	6.05	17.19	9.36	32.60
South Dakota	204,199	15.43	17.36	....	32.79
Nebraska	418,226	10.26	18.65	3.98	32.89
Montana	140,387	11.04	19.96	3.00	34.00
Texas	1,348,107	15.15	16.55	3.28	34.98
Delaware	54,960	18.62	17.03	....	35.65
Ohio	1,766,614	7.28	19.29	10.40	36.97
Maryland	319,873	11.30	19.69	6.25	37.24
Pennsylvania	1,733,283	16.88	20.63	....	37.51
California	1,974,341	5.31	17.32	15.00	37.63
Arizona	109,013	6.87	23.48	8.80	39.15
Wyoming	60,680	10.67	21.36	9.10	41.13
Washington	442,341	17.06	13.44	10.87	41.37
New Hampshire	108,880	20.65	20.82	....	41.47
West Virginia	268,858	16.98	18.12	7.47	42.57
North Carolina	483,602	14.57	24.83	3.38	42.78
Vermont	93,030	25.15	18.31	....	43.46
Oregon	269,007	28.42	16.89	....	45.31
Alabama	285,533	13.08	24.88	7.80	45.76
Connecticut	328,063	24.36	12.49	9.29	46.14
South Carolina	231,274	11.56	29.71	5.00	46.27
Virginia	387,205	15.87	25.55	5.00	46.42
Maine	184,506	16.42	20.10	10.18	46.70
Tennessee	362,431	11.83	25.63	9.30	46.76
New Mexico	78,374	9.66	29.22	8.50	47.38
Louisiana	280,868	16.11	24.85	6.64	47.60
Kentucky	332,848	16.17	23.26	8.40	47.83
Georgia	358,905	12.73	28.49	6.90	48.12
Rhode Island	134,009	17.94	11.54	20.00	49.48
Arkansas	233,128	18.07	28.66	4.00	50.73
Mississippi	250,011	11.85	28.70	12.41	52.96
Florida	345,977	14.33	35.35	10.00	59.68
Nevada	31,915	9.30	20.44	52.28	82.02

ALUMINUM ALLOY TANK TESTS BEING PLANNED

Aluminum alloy tanks, proposed for use in conveying gasoline by motor truck because their lightness permits transportation of a larger pay load, are to undergo a series of tests at New Kensington, Pa., sometime between August 18 and 30. A tentative test program was agreed upon at a meeting held July 2 at American Petroleum Institute headquarters, and the Aluminum Co. of America, which is sponsoring the tests, has promised to have equipment ready for test. Still and motion pictures will provide a complete pictorial record.

The tests are the outcome of work started in January last by the National Fire Protection Association's Committee

(Continued on Page 212)

Export Data on Crude And Refined Prod... Show Present...

WASHINGTON, D. C., July 25.—A study of world trade in petroleum and its products reveals many points of interest in the import tendencies of 1927, 1928 and 1929. Crude petroleum is imported by a small number of countries, but by those in large quantities. The United States, for instance, imported in 1929 almost 79,000,000 bbls., Canada over 32,000,000, and the United Kingdom almost 14,000,000 bbls. Following these three countries there were six others that imported each 1,000,000 or more barrels. The most significant changes over the three-year period are indicated by a decline in British imports from 19,000,000 to 14,000,000 bbls. and an increase in Czechoslovakia from 663,000 to 1,000,000 bbls., in Germany from 276,000 to 630,000 bbls., and in France from 30,000 to 164,000 bbls. Strange as it may seem, United States exports of crude petroleum to Mexico increased from 64,000 bbls. in 1927 to 211,000 bbls. in 1929.

Gasoline presents a very different picture from that of crude petroleum, for, while the number of countries with refinery equipment is small, the number using gasoline and importing it embraced practically every country in the world. The United Kingdom is the largest importer of gasoline, and, while the receipts of crude declined over the years under review, imports of gasoline increased from 16,000,000 to 24,000,000 bbls. Germany, France, the United States and Australia occupy the second, third, fourth and fifth positions, respectively, in gasoline imports with 18,000,000, 16,000,000, 9,000,000 and 6,000,000 bbls. in 1929.

Decreases in Imports

Growth in imports of gasoline seems to be a characteristic of trade in most countries, although some have registered declines. Argentina in 1927 imported over 3,000,000 bbls.; in 1928, receipts declined to 2,500,000 bbls., and in 1929 to 1,283,000 bbls. Japan in the same period imported 433,000, 248,000 and 234,000 bbls. The Netherlands East Indies imported 145,000 bbls. in 1927, increased to 377,000 bbls. in 1928, and declined to 142,000 bbls. in 1929. Malta, which in 1927 took 128,000 bbls., declined to 49,000 bbls., then to 31,000 bbls. Yugoslavia, which increased its imports of crude from 392,000 to 722,000 bbls., reduced its imports of gasoline from 96,000 to 40,000 bbls.

Kerosene, like gasoline, is imported by practically every country, even by those that produce it, but, unlike gasoline, it has an almost stationary demand.

Lubricating oil imports are as universal as those of gasoline, but the quantities are of an entirely different order, as indicated by the fact that there are 17 countries, each of which imports more than 1,000,000 bbls. of gasoline a year, whereas only three—Germany, the United Kingdom and France—import more than 1,000,000 bbls. The general tendency in lubricating oil imports is toward increases.

Gas and fuel oil imports show more fluctuating tendencies than those of any other petroleum product; nevertheless, the general upward tendency is evident. This class of commodities seems to be one of either large imports or none of consequence. There are 22 countries that have imports approximating 1,000,000 bbls. or more and 17 with receipts of 100,000 to 1,000,000 bbls. a year. In 1927, the United Kingdom was first in gas and fuel oil imports with 15,000,000 bbls.; in 1929, the United States led with 21,000,000 bbls.

Natural Gasoline Manufacture

Slight Reduction In Production of West Coast Plants

One hundred forty natural gasoline plants in California with a daily indicated capacity of 2,518,100,000 feet, report a recovery of 65,319,866 gallons of natural gasoline from 48,652,931,000 feet of gas treated in June. This is a decrease of 1,680 bbls. in daily average production.

Utilization of natural gasoline amounted to 1,716,692 bbls., an increase over May of 315,024 bbls. Daily average utilization of 57,223 bbls. was 5,382 bbls. more than daily average production of 51,841 bbls. Stocks of natural gasoline at the end of June amounted to 2,036,276 bbls., of which 43,440 bbls. were reported by natural gasoline plant operators and 1,992,836 bbls. by refinery operators. This is a decrease of 161,457 bbls. under May stocks. This stock figure of 2,036,276 bbls. is approximately 35½ days' supply at the current rate of consumption.

California Natural Gasoline Production, Distribution and Stocks, June, 1930.

Production by fields—	Gas treated M.C.F.	Natural gasoline produced (gallons)
Fullerton and whittier	703,726	1,325,410
Midway	2,939,858	4,235,054
Huntington Beach	975,446	2,656,366
Long Beach	7,037,607	13,473,624
Richfield	796,552	888,834
Santa Fe Springs	12,353,856	15,486,435
Seal Beach	1,205,917	1,983,680
Ventura Avenue	4,373,557	4,764,643
All other fields	18,266,412	20,505,820
Total	48,652,931	65,319,866

Production by methods— Type of plant—	Gas treated M.C.F.	Natural gasoline produced (gallons)
Oil absorption	39,775,459	52,508,000
Compressor	233,281	255,168
Combination comp. and oil absorption	8,644,191	12,556,698
Total	48,652,931	65,319,866
Finished gasoline produced at plants, bbls.		25,378

Distribution—	Bbls.	Bbls.
Stocks first of month		2,197,733
Produced during month		1,555,235
Quantity mixed with crude or unfinished oils	111,227	
Used in blending at refineries	1,543,397	
Stocks end of month	2,036,276	
Balance*	62,068	
Total	3,752,968	3,752,968

*Includes evaporation losses, purchases by jobbers for blending, etc.

PRODUCTION IN JAPAN GAINS

According to preliminary data, natural gasoline production in Taiwan, Japan, is gaining. The final figure for 1929 is not yet available but it is certain that production gained over 1928 with further gains so far this year.

The production fluctuated from 346,802 gallons in 1925 to 849,600 gallons in 1926, 211,090 gallons in 1927 and 547,499 gallons in 1928. The natural gasoline is transported by pipe line and tank car to the refinery where it is treated and distributed to the trade.

CARBON BLACK PLANT

The Ethane Carbon Co. has been granted permission in Texas to construct a plant in the Big Lake Field for the manufacture of carbon black by burning the residue gas that comes from the casinghead gasoline plants there.

The proposed plant will have an initial consumption of 1,000,000 feet of residue gas daily. Under provisions of the permit the capacity of the plant may be increased to 5,000,000 feet daily, provided there is sufficient residue gas available.

Construction and Operation

PLANT INSPECTION*

When the head of the gasoline department makes the rounds of plants for an occasional inspection, he does not embark on a fault-finding mission. It is his purpose to visit the plants to confirm his opinion that they are functioning in the best possible manner and that they are kept in a good state of repair. If the superintendent desires to find fault, he can do so at almost any plant, for no human being can operate at 100 per cent perfection. Chronic fault finding, unless warranted, for gross neglect or deficiency, is not apt to be corrective. It generally breeds dissatisfaction. It is one thing to find fault, and quite another to point out "improvements" which can be effected here and there.

The general superintendent has not sufficient time in the short sojourn at a plant to get "behind the scenes." His inspection cannot disclose but the high points of the operating conditions. To the extent that he checks up on plant efficiency, he assists the general operating superintendent, who at the time may be hundreds of miles away at another plant.

The conditions apt to be disclosed by an inspection reflect chiefly the ability of, and the interest displayed by, the plant superintendent. It is presumed that the average superintendent of a plant knows how to operate that plant. The superintendent who retains his interest and who does not fall into a rut will see to it that all variables at the plant are under control. The inspection of his plant is a matter of routine and approval. It is one of the pleasures of the general superintendent.

On the other hand, many men fall into a rut and do not see what is going on about their plants and in their districts. They may be on the job and work hard, yet the operations seem out of their control and the plants take on the appearance of neglect. At these plants the inspection affords help to the superintendents. Possibly it is only a word of encouragement, and again it may be a joint inspection in which the rounds are made of the important units of the plants, and during which conditions not up to standard may be pointed out.

*Twenty-first of a series of articles explaining the inner workings of a natural gasoline organization. The series was prepared by an operator actively engaged in all phases of construction and operation.

Factors in Efficiency

There are several factors that build efficiency into the day's operations: (1) The throughput of the available gas up to plant capacity, (2) the maintenance of the lowest obtainable gas and oil temperatures and their cooling agent, water, (3) proper pressures on gas and distillation systems, and, (4) proper pressures and temperatures on the rectifying unit.

A survey of the gathering system might reveal leaky lines or drips; regulators might be hung, dash pots broken off; and gas might be backing up on leases and out through traps. At the plant the cooling system might be out of line due to clogged sprays, scale, uneven distribution in the louvre towers or channeling in the closed coolers. More gasoline is probably lost through this source than through any other deficiency in the plant. Yet this deficiency is the easiest to discover and correct. It is not even necessary to use a thermometer for by the touch of the hand irregularities can easily be discovered. This inspection can be made in a matter of minutes and should be made by the plant superintendent each day, particularly during the hot summer months.

Pressures are vital in the absorbers and still. In the former, they affect absorption efficiency, and in the latter the stripping of the oil, on the one hand, and, on the other, the efficiency of the condensers. Reference to the gauges takes only a few minutes during the inspection.

The engine room does not take up much of the inspector's time. The trained eye can tell almost upon entering the room whether the machinery is in good order. By hand, eye and ear he can discover stuck rings, overheating, faulty lubrication, preignition, bearing trouble, etc.

A glance at the storage to see that there are no obvious leaks, a moment in the treating plant to see how the caustic and hypochlorite are handled and to observe the condition of the pump and tanks is worth while. A few minutes can be spent to advantage in the laboratory and office to inspire cleanliness of equipment and records.

Regular inspections of plants by the departmental head may or may not reveal shortcomings in the plants. Whether they do or not, no one will argue that a lot of benefits from these visits, by a word of commendation where deserved, by the assistance rendered where needed, and by the encouragement given where it is deserved. A great deal of good also comes about in another way. The plant superintendent gets into the habit of making his daily inspection in a more complete way and learns to take personal notice of all operating conditions in his plant in order to cope with irregularities, thus putting himself in a position to correct them before serious losses are encountered and before the office calls them to his attention from its observation of the plant operating records.

Who's Who
IN NATURAL GASOLINE MANUFACTURE

SOUTH PENN OIL CO.

The South Penn Oil Co., the largest producer and buyer of Pennsylvania grade crude oil, is also one of the major manufacturers of natural gasoline in the eastern fields. In the development of large production holdings in Pennsylvania and West Virginia the company over a period of several years has built a large number of gasoline plants.

For the most part these are small compression plants with capacities from 50 to 1,000 gallons daily. These plants are scattered on leases throughout the two states, a plant being installed wherever there is sufficient gas available from producing wells. Some of the wells produce only a few hundred feet of gas daily.

While the output of the individual plants is small, the aggregate output of approximately 60 plants is now approximately 35,000 gallons daily. Some of the natural gasoline is mixed with crude oil, no attempt being made to secure a separate product. Some of the gasoline is moved in tank cars. Through a subsidiary, the Pennzoil Co., the company has a large refinery at Rouseville, near Oil City, Pa. Part of the natural gasoline production is in that area.

The headquarters of the company are located in Pittsburgh. Due to the fact that most of the plants are small, the operation is largely in the hands of the production department. C. B. Turner is superintendent of the West Virginia division and C. P. Balsiger is in charge of sales operations. W. A. Jackley is sales manager of the company.

Following is a partial list of the company's plants, the capacities indicated in some cases covering the output of two or more plants:

PENNSYLVANIA

Location—	Daily capacity (gals.)
Badon	35
Bradford	325
Chaffee	
Chicora	75
Chicora	5
Chicora	150
Evans City	250
Guffey	60
Henry's Mill	150
Kane	150
McDonald	1,200
New Freeport	750
Noblestown	650
North Sheffield	450
Parker's Landing	80
President	325
Tiona	250
Truemans	350
Van	350
Wildwood	100

WEST VIRGINIA

Alvy	1,200
Beall's Mills	200
Blue Creek	1,500
Blue Creek	1,800
Bula (near Wana)	350
Charleston	2,800
Clay	750
Coco	1,500
Fink (west of Churchville)	300
Glenville	700
Macfarlan	1,200
Mannington	800
Metz	600
Middlebourne	250
Middlebourne	50
Middlebourne	150
Pine Grove	1,500
Shinnston	50
Shirley	600
Shirley	500
Shirley	800
Smithfield	2,000
Spencer	1,500
Statler Run	1,700
Walton	1,100
Walton	300
Wolf Summit	1,400
Yawkey	2,600

GREATER CARE REPLACING DOME COVERS NECESSARY

Greater care in replacing dome covers on tank cars by refiners and other buyers of natural gasoline would greatly facilitate operations for the manufacturers and shippers of this product according to those in touch with conditions.

It is pointed out that when natural gasoline is loaded into a tank car more or less air is entrained in the car because the product only partially displaces the air in the car. It is claimed that this situation would be greatly remedied if receivers of natural gasoline would immediately replace dome covers as soon as the cars had been emptied.

It would be even better if the dome cover was removed only for the purpose of opening the outlet valves and then replaced or at least laid across the dome opening so as not to permit an inrush of air. As soon as the car is completely emptied, the dome cover should be set in place and made air tight.

If this is done when the car is again loaded at the manufacturer's loading rack there will be no necessity to purge air and hence no air would be dissolved in the gasoline. It would also reduce hazards always present when the dome cover of a tank car is left open. Another evil of the open tank car is the collection of water and corrosion inside the car.

Brief Items for Petroleum Refiners

DUTCH SHELL SUBSIDIARY TO BUILD NEW REFINERY

According to trade reports from Buenos Aires, the Diadema Petroleum Co. has been authorized to construct an oil refinery in the Dock Sud Zone of the port of Buenos Aires, after negotiations lasting more than two years. It is stated that the refinery will be built on a site having direct access to the projected special dock for handling inflammables. A large proportion of the materials required for construction has been lying on the land for months and it is therefore expected that work will be commenced immediately.

The Cia. Petroleo Diadema S. A. is the local subsidiary of the Royal Dutch-Shell. It is an oil-producing company with wells in the Comodoro Rivadavia zone. Authorization to install a refinery in Argentina was granted to the Diadema under the Alvear regime, but it was only recently confirmed by the present government. The Shell-Mex Oil Co. of Argentina is the transporting and marketing company of the Diadema, which will now be a producing and refining company. The Diadema will also import crude for treatment at its new refinery as well as handling the local output.

SMALL PLANT IN MEXICO

According to Robert Harndon, consul at Tampico, a company known as Cia. Petrolera y Refineria Eureka has recently been incorporated in Mexico for the construction and operation of a small oil refinery at Tampico. An American citizen is president and manager. A tract of land has been acquired immediately across the Panuco River from Tampico and construction will begin at once, to be completed about the end of July.

The plant is to have a capacity of 300 bbls. a day. Machinery and equipment have been bought locally at second hand. The output is to include, in addition to the principal petroleum products, asphalt paint for roofing and a petroleum paint for preserving storage tanks and other metal containers. The company does not plan to sell outside of Mexico.

START CONSTRUCTION OF NEW REFINERY AT TAYLOR

The Taylor Refining Co. will start construction this week on a new plant to be located at Taylor, Tex. The plant will have a capacity of approximately 3,000 bbls. daily.

E. L. Chapman, discoverer of the Williamson County Field from which the crude oil will be obtained and G. L. Rowsey are officials of the company. Mr. Rowsey has been connected with Mid-Continent refinery operations for several years. He is an official of the Great West Refining Co., Big Spring.

A pipe line will be built immediately to the field connecting to the refinery. The crude oil has a gravity of 37 to 38 A.P.I.

CITIES SERVICE IN ELGIN

The Cities Service Oil Co. has bought two lots at the corner of Villa and DuPage Streets, Elgin, Ill., and will very shortly begin the construction of an up-to-date service station. The lots were purchased from the Firestone Rubber Co. The George C. Peterson Co., the Blue Ribbon Co., and the Cities Service Co., have all opened or will very shortly open one or more service stations each. There was no scarcity of gasoline in Elgin before the first of these newcomers began building of the first new service station. Elgin is also a division point of the Standard Oil Co. and other large companies have stations.

IMPORTS OF FOREIGN COUNTRIES SHOW TRENDS IN OIL BUSINESS

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 25. — A statement made public today by the minerals division, Department of Commerce, shows that crude petroleum is imported in large quantities by a comparatively small number of countries, but most countries are increasing buyers of gasoline.

"Kerosene and lubricating oils also are distributed throughout the world, while gas and fuel oil imports show more fluctuations than other petroleum products," according to the report, which states in part:

"A study of world trade in petroleum and its products reveals many points of interest in the import tendencies of 1927, 1928 and 1929. Crude petroleum is imported by a small number of countries, but, by those, in large quantities. The United States, for instance, imported in 1929 almost 79,000,000 bbls., Canada over 32,000,000 bbls., and the United Kingdom almost 14,000,000 bbls. Following these three countries there were six others that imported each 1,000,000 bbls. or more. The most significant changes over the three-year period are indicated by a decline in British imports from 19,000,000 bbls. to 14,000,000 bbls., and an increase in Czechoslovak from 663,000 bbls. to 1,000,000 bbls., in German from 276,000 bbls. to 630,000 bbls., and in French from 30,000 bbls. to 164,000 bbls. Strange as it may seem, United States exports of crude petroleum to Mexico increased from 64,000 bbls. in 1927 to 211,000 bbls. in 1929.

"Gasoline presents a very different picture from that of crude petroleum for while the number of countries with refinery equipment is small, the number using gasoline and importing it embraces practically every country in the world. The United Kingdom is the largest importer of gasoline, and while receipts of crude declined over the years under review, imports of gasoline increased from 16,000,000 bbls. to 24,000,000 bbls. Germany, France, the United States and Australia occupy the second, third, fourth, and fifth positions, respectively, in gasoline imports, with 18,000,000 bbls., 16,000,000 bbls., 9,000,000 bbls., and 6,000,000 bbls. in 1929.

"Growth in imports of gasoline seem to be a characteristic of trade in most countries, although some have registered declines. Argentina in 1927 imported over 3,000,000 bbls., in 1928 receipts declined to 2,500,000 bbls., and in 1929 to 1,283,000 bbls. Japan in the same periods imported 433,000 bbls., 248,000 bbls., and 234,000 bbls. The Netherland East Indies imported 145,000 bbls. in 1927, increased to 377,000 bbls. in 1928, and declined to 142,000 bbls. in 1929. Malta, which in 1927 took 128,000 bbls., declined to 49,000 bbls., then to 31,000 bbls. Yugoslavia, which increased its imports of crude from 392,000 to 722,000 bbls., reduced its imports of gasoline from 96,000 to 40,000 bbls.

"Kerosene, like gasoline, is imported by practically every country, even by those that produce it, but, unlike gasoline, it has an almost stationary demand. Those countries with imports of more than 1,000,000 bbls. during 1929 are as follows:

United Kingdom	7,290,000
China	6,263,000
British India	2,951,000
Egypt	2,509,000
Japan	2,152,000
France	1,814,000
Netherlands	1,510,000
Italy	1,253,000
British Malaya	1,192,000
Germany	1,153,000
Australia	1,145,000

"In this group of countries importing annually more than 1,000,000 bbls. of kerosene each only two recorded significant changes in the three past years—the United Kingdom and Japan. The former country imported 6,117,000 bbls. in 1927, dropped to 5,422,000 bbls. in 1928, but increased to 7,290,000 bbls. in 1929. Japan imported 1,273,000 bbls. in 1927, 1,631,000 bbls. in 1928 and 2,152,000 bbls. in 1929."

START OIL SHALE PLANT

NEW YORK, July 26. — Torbanite Products, Ltd., has started production of oil from oil shales at its new plant at New Glasgow, N. S. The first unit of the new plant went into operation a short time ago, with capacity for handling 50 tons of the shale per day, and other units will be added.

According to Dr. George H. Kent, president of the company, plans have been made for developing the huge deposits of torbanite oil shale which exist at several points in Nova Scotia.

The rock is heated to about 800° F. in an air-tight retort and the resulting hydrocarbon gases are cooled and condensed. As high as 170 Imperial gallons have been extracted from 1 ton of torbanite, it is stated, with the average extraction 40 to 60 Imperial gallons per ton.

REDUCES CRUDE PURCHASES

The Continental Oil Co., effective August 1 in Wichita, Archer, Young and Jack Counties of North Texas, will reduce its runs from leases to which it is connected 50 per cent. The 50 per cent figure will be based on average runs during May and June of this year. The company in addition to its own production buys for its refinery located at Wichita Falls.

USE GASOLINE AS BAIT IN AUTOMOBILE SALES

CHICAGO, July 26.—The use of gasoline as an inducement in the sale of other merchandise, is now quite a common thing. Gasoline at cost or less than cost is offered by some of the large country stores and they would probably do the same at city stores if it were not for restrictions imposed either by the laws governing the locating of service stations or the rules regarding parking.

A late variation of this use of gasoline as a means of closing sales is the offer being made by many of the garages and automobile sales companies in the less prominent sections of this and other cities, to give to any buyer of a car at that place, a supply of gasoline for 60 days. No question is raised as to the quantity to be taken by the buyer. An estimate of the probable expense to the seller of the car based on a cost to that dealer of 13 cents a gallon, and it could hardly be less, would probably mean the gift of gasoline costing the dealer about $25 and worth anywhere from $35 to $40 to the motorist.

As the car market is inactive right now it is improbable that the quantity of gasoline thus given away is considerable. But this is only one instance out of many in which gasoline is used as a bait to draw customers.

TIDE WATER WILL MARKET PENNSYLVANIA MOTOR OIL

The Tide Water Oil Co. will shortly offer through its stations and dealers, motor oils manufactured 100 per cent from Pennsylvania Grade crude oil according to Noel Robinson, vice president in charge of marketing.

The announcement was made at a meeting last week in Bradford, Pa., attended by a large number of crude oil producers in that area. The meeting was one of several that has been held recently with the view of restricting the production of Pennsylvania Grade crude oil in that area and improving market conditions both for crude oil and refined products.

Mr. Robinson said that provided that satisfactory arrangements could be made to assure an adequate supply of crude oil from the Bradford-Allegany area the Tide Water company would manufacture and sell the 100 per cent Pennsylvania lubricants. The company in the past has been using large quantities of Pennsylvania Grade crude oil in the manufacture of motor oils but other paraffin base stocks were also blended with this stock. The company in addition to its station outlets in the eastern states has a nationwide distribution for motor and industrial oils. The company also has a large foreign demand.

Regarding the Tide Water company's increasing use of Pennsylvania Grade crude oil, Mr. Robinson said in 1924 the purchases averaged 2,600 bbls. daily; 1925, 3,370 bbls.; 1926, 4,050 bbls.; 1927, 4,300 bbls.; 1928, 5,200 bbls.; 1929, 7,400 bbls., and the first six months of 1930, 8,280 bbls. The company is now one of the largest single buyers of the crude oil.

REFINERS REPORTING ON GASOLINE STOCK NEEDS

The questionnaire sent to refiners recently by the American Petroleum Institute in an effort to determine the minimum working stocks of gasoline needed for satisfactory operation of the country's refineries has met with wide response, it was said at the Institute. First replies were received within a few days after the request was made and since have continued in such volume as to indicate a keen interest in the project.

Collection of these data represents the first effort on the part of the petroleum industry through any agency to determine what stocks of gasoline refiners actually need to carry on their operations. By gasoline working stocks is meant the minimum to which the industry can allow its gasoline stocks to fall and still be able satisfactorily to fill its orders.

In the questionnaire refiners were asked to list their gasoline working stocks at refineries, bulk terminals and in transit on September 30, 1930. The Institute will compile data showing required stocks for each refinery district and for the country as a whole.

AWARD FUEL CONTRACT

The Richfield Oil Co. of California has just been awarded a contract by the United States Navy Department for 1,050,000 bbls. of Bunker "C" fuel oil, covering Navy requirements at Pearl Harbor, Hawaii. The contract was awarded Richfield at a price of $0.872 per barrel, with the Union Oil Co. bidding $0.8825, The Texas Co. $0.90, Associated Oil Co. $0.935, Shell Oil Co. $0.95, and the Standard Oil Co. of California $1.15. Deliveries are to be completed by June 30, 1931.

During the year ended June 30, 1930, Richfield delivered 700,000 bbls. of Bunker "C" fuel oil to the Navy at Pearl Harbor on a contract awarded during 1929.

Heat Exchangers *for*

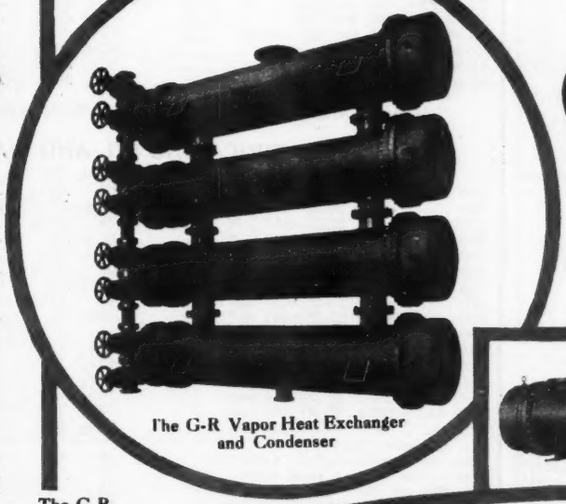
Booths 42-43
Oklahoma Bldg.

Condensing or cooling
Clean or dirty fluids
Liquids, vapors or gases
High or low pressures
Horizontal or vertical installation

Send for Bulletins

THE GRISCOM-RUSSELL COMPANY
285 Madison Ave., New York
Branches in principal oil centers.

The G-R
Vaneflo Exchanger

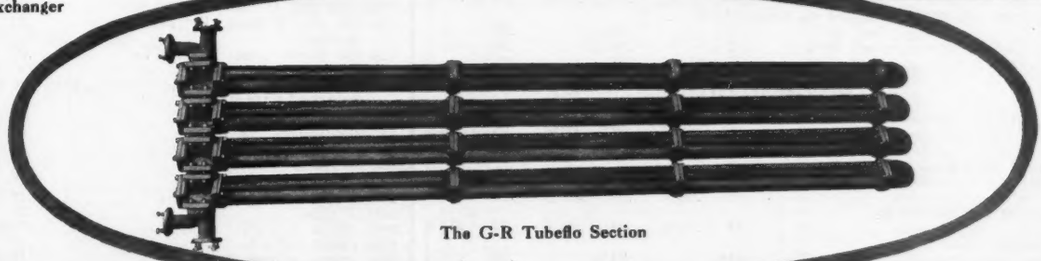


The G-R Vapor Heat Exchanger
and Condenser

Griscom-Russell

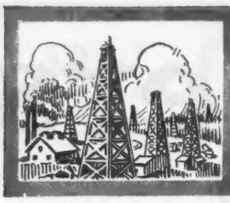
Heat Transfer Apparatus

The G-R Vaneflo Gas Cooler



The G-R Tubeflo Section

The G-R Vaneflo Exchanger



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	July 29		July 22		July 15	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.06	.06¼	.06	.06¼	.05¾	.06¼
56-58 450 endpoint	.05¾	.06¼	.05¾	.06¼	.05¾	.06¼
*58-60 437 endpoint (U. S. Motor)	.0651		.065		.066	
*60-62 437 endpoint	†.06	.06¼	†.06	.06½	†.06	.06½
*60-62 400 endpoint	.07125		†.06⅜	.06½	†.06¼	.06½
*64-66 375 endpoint	†.06⅝	.07	†.06⅞	.06¾	†.06½	.06¾
68-70 360 endpoint	.07	.07½	.07	.07½	.07	.07½
64-66 437 endpoint (blend)	.05½	.06	.05½	.06	.05½	.06
*Weighted average prices July 28, 21 and 14 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.						
NORTH TEXAS—						
50-52 450 endpoint	.05¾	.06¼	.05¾	.06¼	.05¾	.06¼
58-60 450 endpoint	.05¾	.06	.05¾	.06	.05¾	.06
58-60 437 endpoint (U. S. Motor)	.05¾	.06¼	.05¾	.06¼	.05¾	.06¼
60-62 400 endpoint	.06	.06¼	.06	.06¼	.06	.06¼
64-66 390 endpoint	.06¼	.06½	.06¼	.06½	.06¼	.06½
64-66 375 endpoint	.06½	.06¾	.06½	.06¾	.06½	.06¾
68-70 360 endpoint	.06⅞	.07	.06⅞	.07	.06¾	.07
64-66 437 endpoint (blend)	.05½	.06	.05½	.06	.05½	.06
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.06¾	.07	.06¾	.07
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.06¾	.07	.06¾	.07
PENNSYLVANIA—						
52-54 Naphtha	.07	.07¼	.07	.07¼	.07¼	
54-56 Naphtha	.07¼	.07½	.07¼	.07½	.07½	
58-60 Gasoline	.07½	.07¾	.07¾	.08	.07¾	.08
60 Gasoline	.07¾	.08	.08	.08¼	.08	.08¼
62 Gasoline	.08	.08¼	.08¼	.08½	.08¼	.08½
64 Gasoline	.08¼	.08½	.08½	.08¾	.08½	.08¾
68-70 350 endpoint gasoline	.08¾	.09	.08¾	.09	.08¾	.09
CALIFORNIA—						
†58-60 437 endpoint (U. S. Motor) domestic	.09½	.10	.09½	.10	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.05⅝	.06	.05¾	.06¼	.05¾	.06¼
56-58 450 endpoint	.05¾	.06⅛	.05¾	.06	.05¾	.06
58-60 437 endpoint (U. S. Motor)	.05⅞	.06½	.05⅞	.06½	.06	.06½
60-62 400 endpoint	.06	.06½	.06⅛	.06⅜	.06¼	.06½
64-66 375 endpoint	.06¾	.07	.06¾	.07	.07	.07¼
68-70 360 endpoint	.07	.07¼	.07⅛	.07⅜	.07¼	.07½
64-66 437 endpoint (blend)	.05¾	.06	.05¾	.06	.06	.06¼
GULF COAST (Export)—						
58-60 U. S. Motor	.08		.08		.08	
60-62 400 endpoint	.09		.09		.09	
61-63 390 endpoint	.09¼		.09¼		.09¼	
64-66 375 endpoint	.09½		.09½		.09½	
*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.						

NATURAL GASOLINE

	July 29		July 22		July 15	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¾		.04½	.04⅝	.04¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¾		.04½		.04	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04½		.04¼		.04	
Grade BB, 84-92, 375 e.p., rec. 85%	.04½		.04¼		.03¾	.04
Grade C, 80-92, 375 e.p., rec. 78%	.04½		.04¼		.03¾	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¾		.04½	.04⅝	.04¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¾		.04½		.04	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04½		.04¼		.04	
Grade BB, 84-92, 375 e.p., rec. 85%	.04½		.04¼		.03¾	.04
Grade C, 80-92, 375 e.p., rec. 78%	.04½		.04¼		.03¾	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.05	.05¼	.04¾	.05	.04½	.04¾
Grade BB, 84-92, 375 e.p., rec. 85%	.04¾		.04¼	.04½	.04¼	.04½
Grade C, 80-92, 375 e.p., rec. 78%	.04½	.04¾	.04	.04¼	.04	.04¼
CALIFORNIA—						
75-78, 375-390 endpoint	.06½	.06¾	.06½	.06¾	.06¼	.06¾
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¾		.04½		.04¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¾		.04¼		.04	
Grade BB, 84-92, 375 e.p., rec. 85%	.04½		.04		.03¾	

BURNING OIL

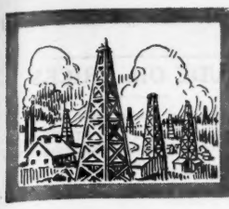
	July 29		July 22		July 15	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
42-44 water white kerosene	.03½	.04	.03½	.04	.03½	.04
NORTH TEXAS—						
41-43 water white kerosene	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
40-41 water white kerosene	.03	.03⅛	.03	.03⅛	.03	.03⅛
***NORTH LOUISIANA—**						
41-43 water white kerosene	.04	.04¼	.04	.04¼	.04	.04¼
***ARKANSAS—**						
41-43 water white kerosene	.04¼		.04¼		.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.04¼		.04¼		.04¼	
45 Kerosene water white	.04½	.04⅝	.04½	.04⅝	.04⅝	
46 Kerosene water white	.04¾	.05	.04¾	.05	.04¾	.05
300 Mineral Seal	.05¾	.06	.05¾	.06	.05¾	.06
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.04½	.04	.04½	.04	.04½
Engine distillate, 43-44, 445 endpoint	.07	.07½	.07	.07½	.06	.06½
Engine distillate, 42-44, 480 endpoint	.06	.06½	.06	.06½	.05	.05½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03¼	.03½	.03¼	.03½	.03¼	.03½
42-44 water white kerosene	.03½	.03¾	.03½	.03¾	.03½	.03¾
GULF COAST (Export)—						
41-43 prime white	.06		.06		.06	
41-43 water white	.07		.07		.07	
*Louisiana, Arkansas, Mississippi and East Texas delivery.						

FUEL OIL

	July 29		July 22		July 15	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.50
18-22 Fuel Oil, per bbl.	.47½	.50	.47½	.50	.47½	.50
20-22 Fuel Oil, per bbl.	.50	.57½	.50	.57½	.50	.57½
22-26 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.70
26-30 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
28-30 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color)	.02¼	.02½	.02¼	.02½	.02¼	.02½
36-38 Distillate	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
32-36 Gas Oil (industrial)	.02	.02⅛	.02	.02⅛	.02	.02⅛
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.75	.80	.75	.80	.75	.80
30-32 Gas Oil	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.02¾
***ARKANSAS—**						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02⅞	.02½	.02⅞	.02½	.02⅞	.02½
16-22 Refinery Fuel Oil, per bbl.	.60	.70	.60	.70	.60	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.75	.80	.75	.80	.75	.80
Bunker C Fuel (small lots)	1.05	1.10	1.05	1.10	1.05	1.10
PENNSYLVANIA—						
30-34 Fuel Oil	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
36-40 Fuel Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
CALIFORNIA—						
33-36 Distillate	.02½	.03	.02½	.03	.02½	.03
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-20 Fuel Oil, Bunker (at tidewater)	.65	.75	.65	.75	.60	.65
15-20 Fuel Oil (cargo lots), per bbl.	.60	.70	.60	.70	.55	.65
27 plus Diesel, per bbl.	.80	.90	.80	.90	.80	.90
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.57½	.62½	.57½	.62½	.57½	.65
18-22 Fuel Oil, per bbl.	.47½	.52½	.47½	.52½	.45	.50
28-30 Fuel Oil, per bbl. (zero)	.77½	.82½	.77½	.82½	.77½	.82½
32-36 Gas Oil (zero)	.02⅜	.02½	.02⅜	.02½	.02⅜	.02⅝
32-36 Gas Oil (industrial)	.02½	.02¼	.02½	.02¼	.02	.02⅛
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
*Louisiana, Arkansas, Mississippi and East Texas delivery.						

LUBRICATING OIL AND WAX

	July 29		July 22		July 15	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05½	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.08	.08½	.08	.08½	.08	.08½
150 vis., 4 color, 20-25 cold test	.07½	.08	.07½	.08	.07½	.08
180 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 5 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
200 vis., 3 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 4 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis., 5 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.08	.11	.08	.11	.08	.11
600, steam refined, dark green	.06	.08	.06	.08	.06	.08
190-200 vis., D color, Bright Stock	.33		.33		.37	
150-160 vis., D color, Bright Stock	.28	.32	.28	.32	.30	.32
*150-160 vis., D color, Bright Stock	.26	.28	.26	.28	.28	.30
150-160 vis., E color, Bright Stock	.24	.26	.24	.26	.26	.28
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛
*High cold test. All bright stock prices are for domestic movement.						
PENNSYLVANIA—						
34 Neutral	.05¾	.06½	.05¾	.06½	.05¾	.06½
34 Sundebloom	.05½	.06	.05¾	.06	.05¾	.06
36 Miners' Neutral	.05¾	.06	.05¾	.06	.06	.06¼
150, 3 color	.12½	.14	.12½	.14	.13	.14
180, 3 color	.16	.18	.16	.18	.17	.18
200, 3 color	.18½	.20	.19	.21	.20	.23
220, 3 color	.23	.23½	.23	.23½	.23	.24
600, steam refined	.10½	.11	.10½	.11	.10	.11
635, steam refined	.15	.17	.14	.17	.14	.17
650, steam refined	.15½	.19	.15½	.19	.17	.19
600, Pennsylvania Flash	.19	.21	.20	.21	.21	
630, Pennsylvania Flash	.28	.29	.28	.29	.28	.29
600, E filtered	.16½	.18	.16½	.18	.17½	.18
600, D filtered	.20	.22	.20	.22	.20	.23
Pennsylvania Bright Stocks	.24	.25	.24	.25	.25	.27
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	
*At New York.						
GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
200 vis., 3 color, pale oil	.09½		.09½		.09½	
300 vis., 3 color, pale oil	.10¾		.10¾		.10¾	
500 vis., 3½ color, pale oil	.12	.12¾	.12	.12¾	.12	.12¾
750 vis., 3½ color, pale oil	.13½		.13½		.13½	
1,200 vis., 3½ color, pale oil	.16		.16		.16	
2,000 vis., 6 plus color, red oil	.17		.17		.17	



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

200 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09
300 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼
500 vis., 5-6 color, red oil	.11¼		.11¼		.11¼	
750 vis., 5-6 color, red oil	.12¾	.13	.12¾	.13	.12¾	.13
1,200 vis., 5-6 color, red oil	.15		.15		.15	
2,000 vis., 4 color, pale oil	.17		.17		.17	
200 vis., 2½ color, filtered oil	.11	.12	.11	.12	.11	.12
300 vis., 2½ color, filtered oil	.12	.13	.12	.13	.12	.13
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.15¼	.15½	.15¼	.15½	.15¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	July 29		July 22		July 15	
Gasoline, U. S., Motor, 58-60, 437 e.p.	.08	.10	.08	.10	.08½	.10
Kerosene, water white, 41-43	.06¾		.07	.07½	.07	.07¼
*Fuel Oil, Bunker "C," 41-43	1.15		1.15		1.15	
Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10½		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07½		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.02⅞		.02¾	
125-127 a.m.p., per lb.	.03¼		.03¼		.03⅛	
130-132 a.m.p., per lb.	.03½		.03½		.03½	
133-135 a.m.p., per lb.	.04½		.04½		.04⅜	
135-137 a.m.p., per lb.	.04⅝		.04⅝		.04⅝	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01⅜		.01⅜		.01⅜	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06	
Lily White	.06⅜		.06¼		.06¼	
Snow White	.08		.08		.08	

*Lighterage 5.0 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	July 29		July 22		July 15	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.18½	.19	.18	.19	.18	.19
635, steam refined	.20½	.21	.20	.21	.20	.21
650, steam refined	.24½	.25	.24	.25	.24	.25
600, Pennsylvania Flash	.28		.29		.30	
630, Pennsylvania Flash	.31		.32		.33	
600, Warren E	.26		.26		.28	
600, Oil City E	.25		.25		.27	
Light 140-150 Bright Stocks	.33		.32		.33	
Dark 140-150 Bright Stocks	.31		.30		.31	

LOS ANGELES EXPORT PRICES

	July 29		July 22		July 15	
Kerosene, water white	.03¾	.04½	.03¾	.04½	.03¾	.04½
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.06¾	.06½	.06¾	.06½	.06¾

*Prices on coastwise shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posted all oil 40 gravity and above at $1.43 on April 10.

Corsicana heavy (April 10, 1930)..... $ .80

Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

In Noel-McConnell district Prairie Oil & Gas Co. posted April 10, below 30 degrees, 75½ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

WEST TEXAS

Iatan*.....Same as North Texas

Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Ector.....

.....See gravity table, Column 3

Howard and Glasscock.....

.....See gravity table, Column 9

Chalk† (April 10, 1930).....$ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (April 11, 1930).....$ .90

Smackover, 24 gravity and above (April 11, 1930)..... 1.05

Carterville, Sarepta and Cotton Valley, below 36 gravity (April 11, 1930)..... .85

Bellevue (April 11, 1930)..... 1.15

Urania (April 11, 1930)..... .95

East El Dorado (April 11, 1930)..... .90

Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

Grade A (April 10, 1930)*.....$1.15

Grade B, 25 degrees and upward.....

.....See gravity table

Jennings, La. (April 10, 1930)†..... 1.10

Refugio (light).....Same as Grade B

Refugio (heavy) (April 10, 1930)‖..... .85

Sorrento (April 10, 1930)‡..... 1.10

Markham (April 10, 1930)§..... .85

High Island (April 10, 1930)¶..... .95

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Pipe Line Co. ¶Posted by Gulf Pipe Line Co. ‖Humble Oil & Refining Co. and Gulf Coast Pipe Line Co.

(Continued on Page 208)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Okla.-Kans.	2 N. C. Texas, No. La., Arkansas	3 Crane, Upton, Ector, Crockett, Winkler, Pecos, Mitchell, (West Texas), Lea, N. Mex.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Howard-Glasscock (West Texas)	10 Grade B Gulf Coast and Refugio, Texas
Below 25	.75	.72	.65	....	....	....	....	....	.65	1.00
25 to 25.9	.80	.77	.68	....	....	....	....	....	.68	1.03
26 to 26.9	.85	.82	.71	....	....	....	....	....	.71	1.06
27 to 27.9	.90	.87	.74	....	....	....	....	.76	.74	1.09
28 to 28.9	.95	.92	.77	....	.75½	....	....	.81	.76	1.12
29 to 29.9	1.00	.97	.80	.75½	.80½	....	1.00	.96	.78	1.15
30 to 30.9	1.05	1.02	.83	.80½	.85½	....	1.05	.91	.80	1.18
31 to 31.9	1.10	1.07	.86	.85½	.90½	.77½	1.10	.96	.82	1.21
32 to 32.9	1.15	1.12	.89	.90½	.95½	.82½	1.15	1.01	.84	1.24
33 to 33.9	1.18½	1.17	.92	.95½	1.00½	.87½	1.18½	....	.86	1.27
34 to 34.9	1.22	1.22	.95	1.00½	1.05½	.92½	1.22	....	.88	1.30
35 to 35.9	1.25½	1.25½	.98	1.04	1.09	.96	1.25½	....	.90	1.33
36 to 36.9	1.29	1.29	1.01	1.07½	1.12½	.99½	1.29	....	.92	1.36
37 to 37.9	1.32½	1.32½	....	1.11	1.16	1.03	1.32½	....	....	1.39
38 to 38.9	1.36	1.36	....	1.14½	1.19½	1.06½	....	....	....	1.42
39 to 39.9	1.39½	1.39½	....	1.18	1.23	1.10	....	....	....	1.44
40 to 40.9	1.43	1.43	....	1.21½	1.26½	1.13½	....	....	....	1.46
41 to 41.9	1.46½	1.46½	....	1.25	1.30	1.17	....	....	....	1.48
42 to 42.9	1.50	1.50	....	1.28½	1.33½	1.20½	....	....	....	1.50
43 to 43.9	1.53½	1.53½	....	1.32	1.37	1.24	....	....	....	1.52
44 and above	1.57	1.57	....	1.35½	1.40½	1.27½	....	....	....	1.54

Column 1, Note—Above prices posted April 10, 1930, by Carter Oil Co. (beginning at 25° and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24° and below, the Magnolia Petroleum alone excepted. The Magnolia on April 10 posted the following prices: Below 26 gravity, 70 cents; 26-26.9, 76 cents; 27-27.9, 82 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31 and up and including 44° and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

Column 2—Humble Oil & Refining Co. posted above prices April 10, 1930, and was followed by all other companies in Texas except Magnolia which posted a different price schedule than Humble up to 33.9° (see note in paragraph just above). The Texas Company posted North Louisiana and Arkansas on April 10, and Standard of Louisiana posted on April 11, followed by other companies, but Magnolia's price schedule begins with below 28 gravity at 87 cents. North Central Texas includes North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona, Moran and Corsicana light. Arkansas and Louisiana pools include Caddo, Bull Bayou, Crichton, Cotton Valley (above 36 gravity), DeSoto, Haynesville, Homer, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. April 10, 1930, and Magnolia Petroleum Co. April 10, 1930.

Columns 4, 5 and 6—Humble Oil & Refining Co., Prairie Oil & Gas Co., Magnolia Petroleum Co., April 10, 1930.

Column 7—Mid-West Refining Co. April 11. All crude over 37 gravity $1.32½.

Column 8—Louisiana Oil & Refining Co., April 11.

Column 10—Humble Oil & Refining Co., April 10. Magnolia Petroleum Co. posted below 25 gravity, 65 cents, with 3-cent differential upward to and including 36 and above which was posted at $1.01.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective March 11, 1930)

Gravity—	1 Seal Beach, Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Huntington Beach, Signal Hill, Inglewood	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs (June 14, 1930)	6 Santa Maria, Coalinga	7 Wheeler Ridge, Fruitvale	8 Orcutt, Ventura, Rincon	9 Ventura Avenue (Nov. 6)	10 Elwood Terrace	11 Athens, Rosecrans, Dominguez
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	....	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.14	....	1.09	1 11	1.07	1 07	1 07	1 10	1.07	....	1.14
25 to 25.9	1 21	....	1.16	1.17	1.13	1.12	1.12	1.18	1.14	....	1.19
26 to 26.9	1.28	....	1.23	1.23	1.19	1.17	1.17	1.26	1.21	....	1.24
27 to 27.9	1 35	....	1.30	1.29	1.25	1 23	1.22	....	1.28	....	1.29
28 to 28.9	1 42	....	1.35	1.35	1.31	1 27	....	....	1.35	....	1 34
29 to 29.9	1.46	....	1.41	1.38	1.37	1.31	....	....	1.39	....	1 39
30 to 30.9	1.50	....	1.47	1.41	1 43	1.35	....	....	1 43	....	1.45
31 to 31.9	1.55	....	1.53	....	1.49	1 39	....	....	1.48	....	1.51
32 to 32.9	1 60	....	1.59	....	1.55	1.43	....	....	1 53	....	1 57
33 to 33.9	1 65	....	1.65	....	1 60	1.47	....	....	1.59	....	1.64
34 to 34.9	1.70	....	....	....	1 65	1 51	....	....	1.65	1 32	1 71
35 to 35.9	1 75	....	....	....	1 70	1.55	....	....	1.71	1.39	1 75
36 to 36.9	1 80	....	....	....	1.75	....	....	....	....	1.46	1 84
37 to 37.9	1.85	....	....	....	1.80	....	....	....	....	1.53	1.90
38 to 38.9	1.90	....	....	....	1 85	....	....	....	....	1 60	1.96
39 to 39.9	....	....	....	....	1.90	....	....	....	....	1.66	2.02
40 to 40.9	....	....	....	....	....	....	....	....	....	1 72	2 08
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.14
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.20

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above 55 cents, effective March 11. On March 11, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

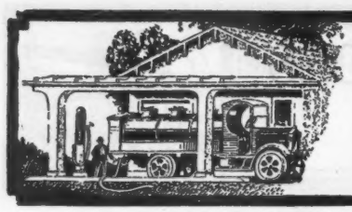
Column 5—Price change posted by Standard of California June 14.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Column 10—Standard posted price f.o.b. tanker.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns July 29.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago†	18.0	19 0	3.0	13.0
Decatur, Ill.	18.2	19.2	3.0	13.1
E. St. Louis	17.4	18.4	3.0	12.2
Joliet	18.4	19.4	3.0	13.3
Peoria	18.2	19.2	3.0	13.1
Quincy	18.2	19.2	3.0	12.9
Davenport, Ia.	18.5	19.5	3.0	13.3
Des Moines	18.5	19.5	3.0	13.3
Keokuk	18 5	19.5	3.0	13.3
Sioux City	18.1	19.1	3.0	12.9
Duluth, Minn.	19.5	20.5	3.0	13.9
Mankato	19.1	20.1	3.0	13.7
Minneapolis	19.2	20 2	3.0	13.9
LaCrosse, Wis.	18.2	19.2	2.0	14.0
Milwaukee	17.1	18.1	2.0	12.9
Madison	17.3	18.3	2.0	13.1
Detroit, Mich.	18.8	19 8	3.0	14.7
Grand Rapids	18.7	19.7	3.0	14.6
Saginaw	18.9	19.9	3.0	14.8
Evansville, Ind.	19.0	20.0	4.0	14.0
Fort Wayne	19.4	20.4	4.0	14.4
Indianapolis	19 2	20.2	4.0	14.2
South Bend	19.4	20.4	4.0	14.4
Fargo, N. D.	20.9	21.9	3.0	15.9
Huron, S. D.	20.3	21.3	4.0	14.7
Sioux Falls	19.1	20.1	4.0	14.4
K. C., Mo.*	17.9	18.9	3.0	11.6
Springfield*	17.8	18.8	3.0	12.5
St. Louis*	16.9	17.9	2.5	12.3
St. Joseph	17.5	18.6	2.0	12.2
Wichita, Kans.	16.8	15.8	3.0	11.8
Bartlesville, Okl.	17.5	20.5	4.0	11.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	10.0
V. M. & P. naphtha	16.7	12.0
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	14.0	18.0	4 0	12.0
Fort Worth	14.0	17.0	4.0	11.0
Houston	15.0	19.0	4.0	11.0
San Antonio	13.0	17.0	4.0	11.0
El Paso	16.0	20.0	4.0	13 0
Texarkana	14.0	15.0	4.0	12.0
Muskogee*	16.0	19.0	4.0	9.0
Okla. City*	15.0	18.0	4.0	10.0
Tulsa*	16.0	20.0	4 0	10.0
Ft. Smith, Ark.	14.0	15.0	5.0	12.0
Little Rock	17.0	17.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	16.0	19.0	4.0	15.5
Pueblo	17.0	20.0	4.0	15 5
Grand Junction	21.5	24.5	4.0	19.0
Casper, Wyo.	19.0	22.0	4.0	14.0
Cheyenne	20.5	23.5	4.0	15.5
Butte, Mont.	24.5	23.0	5 0	20.0
Billings	24.5	27.5	5.0	18.5
Great Falls	24.5	27.5	5.0	20.0
Helena	24.5	27.5	5.0	20.0
Salt Lake, Utah	20.0	23 0	3.5	17.0
Albu'que, N. M.	16.0	20.0	5.0	15.0
Boise, Idaho	23.5	26.5	5.0	19.0
Twin Falls	23.5	27.5	5.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Pittsburgh, Pa.	16.0	*22.0	...	13 0
Philadelphia	16.0	*22.0	...	13.0
Scranton	16.0	*22.0	...	13.0
Allentown	16.0	*22.0	...	13.0
Altoona	16 0	*22.0	...	13.0
Erie	15.0	*19.0	...	13.0
Dover, Del.	19.0	21.0	3.0	13.0
Wilmington	19.0	21.0	3.0	13.0
Springf'd, Mass.	17.5	19.5	2.0	12 5
Worcester	17.3	19.3	2.0	12.3
Boston	16.5	18.5	2.0	11.5
Providence, R.I.	16.7	18.7	2.0	11.7
Hartford, Conn.	17.5	19.5	2 0	12.5
New Haven	17.6	19.6	2.0	12.6

*Includes tax of 4 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	17.6	19.6	2.0	15.6
New York*	16.3	18.3	2.0	14.3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	16.5	18.5	2.0	13.5
Augusta, Me.	19.8	21.8	4.0	14.8
Manch't'r, N. H.	19.4	21 4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.	19.0	21.0	6.0	15.5
Augusta	22.0	24.0	6.0	15.5
Macon	20.0	22.0	6 0	14.0
Savannah	20.0	22.0	6.0	14.0
Birm'ham, Ala.	18.0	20.0	5.0	14.5
Mobile	18.0	18.0	4.0	13.5
Montgomery	19.0	21.0	4.0	15 0
Clarks'le, Miss.	19.0	21.0	5.0	12.5
Jackson	19.0	21.0	5.0	13.0
Natchez	19.0	21.0	5.0	13.0
Gulfport	20.5	22.5	5.0	13 0
Vicksburg	19.0	21.0	5.0	13.0
Jack'ville, Fla.	20.0	21.0	6.0	14.0
Miami	21.0	23.0	6.0	14.0
Pensacola	19 0	19.0	6.0	13.5
Tampa	20.0	22.0	5.0	13.0
Lexington, Ky.	19.0	20.0	5.0	14.5
Covington	21.0	22.0	5.0	14.5
Louisville	18.0	20.0	5.0	13 0
Ashland	19.0	21.0	5.0	15.0
Catlettsburg	19.0	21.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlantic City	16.5	18.5	2.0	13.5
Newark, N. J.	15.5	17.5	2.0	12.5
Annapolis	18.0	20.0	4.0	13.0
Baltimore	17.2	19.2	4.0	10 5
Cumberland	19.0	21.0	4.0	14.0
Wash'gton, D.C.	15.7	17.7	2.0	12.7
Danville, Va.	19.8	21.8	5.0	13.8
Norfo'k	18 3	20.3	5.0	11.0
Petersburg	19.3	21.3	5.0	13.3
Roanoke	19.0	20.0	5.0	14.0
Richmond	16.7	18.7	5.0	12.7
Charles'n, W.Va.	18.5	20.5	4.0	12.5
Keyser	19.1	21.1	4.0	14.1
Parkersburg	17.2	19.2	4.0	11.2
Wheeling	18.4	20.4	4.0	12.4
Charlotte, N. C.	20.3	20.3	5.0	14.3
Hickory	20.6	22.6	5.0	14.6
Mt. Airy	20.5	22 5	5.0	14.5
Salisbury	20.5	20.5	5.0	14.5
Charleston, S. C.	19.3	21.3	6.0	12.3
Columbia	21.2	23.2	6.0	14.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Wholesale price	Retail price	Incl'ds tax	tank wagon
Fresno	19.0	17.0	3.0	17 0
San Francisco	19.0	12.0	3.0	15.5
Los Angeles	18.5	16.5	3.0	15.5
Reno, Nev.	24.0	22.0	4.0	19.0
Portland, Ore.	20.5	18 5	4.0	16.5
Seattle, Wash.	19.5	12.5	3.0	16.5
Tacoma	19.5	17.5	3.0	16.5
Spokane	21.5	21.5	3.0	20.5
Phoenix, Ariz.	17.0	20.0	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where discount is 1 cent.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	19.25	21.25	4.0	13.25
McCook	29.75	22.75	4.0	14.75
Norfolk	19.75	21.75	4.0	13 75
N. Platte	20.75	22.75	4.0	14.50
Scottsbluff	20.75	22.75	4.0	14.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points*	20.0	21.0	4.0	†14.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.*	14.5	14.5	5.0	12.0
Baton Rouge	15.5	16.0	4.0	14 0
Alexandria†	17.5	18.0	5.0	13.0
Lafayette*	17.5	18.0	5.0	13.0
Lake Charles*	17.5	18.0	5.0	13.0
Shreveport	15.5	17.5	4.0	13.0
Knoxv'le, Tenn.	19.5	21.5	5.0	15.0
Memphis	17.5	19.5	5.0	12.5
Chattanooga	19.5	20.0	5.0	13.0
Nashville	18.5	19.0	5.0	15.0
Bristol	19 5	21.5	5.0	14.0
Lt. Rock, Ark.	17.0	17.0	5.0	13.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

TANK WAGON CHANGES

Standard Oil Co. of New Jersey reduced gasoline service station price 2 cents at Salisbury, N. C., on July 23.

Standard Oil Co. of Louisiana reduced the kerosene tank wagon price 1 cent at most points in Louisiana, Arkansas and Tennessee effective July 17. Same company on July 19 reduced gasoline tank wagon and service station prices at most points in Louisiana and Arkansas one-half cent a gallon. Same company made similar reduction in Tennessee on July 21.

Continental Oil Co., effective July 14, advanced gasoline tank wagon and service station prices 2 cents at Boise, Idaho.

Magnolia Petroleum Co. effective June 18 reduced gasoline tank wagon 1 cent, service station 2 cents at Little Rock. Same company on June 25 reduced gasoline tank wagon and service station prices 3 cents at Fort Smith. Same company effective July 26 reduced gasoline tank wagon and service station prices 1 cent at San Antonio. These changes not previously announced.

CRUDE OIL PRICE CHANGES

Stoll Refining Co. reduced Oil City, Ky., crude to $1.35 per barrel, effective July 30.

CRUDE OIL PRICES

(Continued from Page 207)

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

(Effective April 11, 1930)

Iles (Feb. 15, 1930):	
33 gravity and above	$ .87
Under 33 gravity	.65
Dutton Creek (Feb. 15, 1930)	1.25
Rock Creek, Wyo.	1.35
Salt Creek	See gravity table
Big Muddy	1.38
Grass Creek, heavy (July 27, 1928)	.90
Grass Creek, light	1.55
Mule Creek (May 21, 1929)	1.20
Elk Basin	1.55
Lance Creek	1.63
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.65
Rex Lake (February 22)	1.10
Osage	1.63
Lost Soldier (contract, May 22)	1.90
Hamilton Dome (March 14, 1927)	.85
Greybull (April 11, 1930)	1.55
Four Bear (May 31, 1929)	.85
Cat Creek	1.75
Pondera (Montana) (April 10, 1930)	1.65
Sunburst (Montana) (Feb. 15, 1930)	1.65
Hogback (Feb. 15, 1930)	1.40
Artesia (New Mexico)	1.05
Lea County	See gravity table

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (April 10, 1930)*	$1.15
Luling (April 10, 1930)	.85
Mirando (April 10, 1930)†	.85
Pettus (April 10, 1930)§	1.40
Salt Flat (April 10, 1930)§	1.15
Thrall‡	...
Lytton Springs (Lockhart)	See gravity table
Somerset (April 10, 1930):	
Below 33 gravity	$1.18
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.19
35 to 35.9 gravity	1.21
36 to 36.9 gravity	1.23
37 to 37.9 gravity	1.25
38 gravity and above	1.27

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective July 11, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$2.05
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	2.00
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	1.75
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (May 2, 1930)	1.75
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (April 11, 1930)	1.31
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (April 11, 1930)	1.47
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60
Wayne District Oil in Cumberland Pipe Lines (April 11, 1930)	1.34
Tide Water Pipe Co.	
Bradford district (July 11)	$2.10
Allegany district (July 11)	2.10
Pure Oil Co.	
Cabin Creek, W. Va. (July 11)	$2.15
Kelly Creek, W. Va. (July 11)	2.00
Bradford Hollow (July 11)	2.00

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1930)

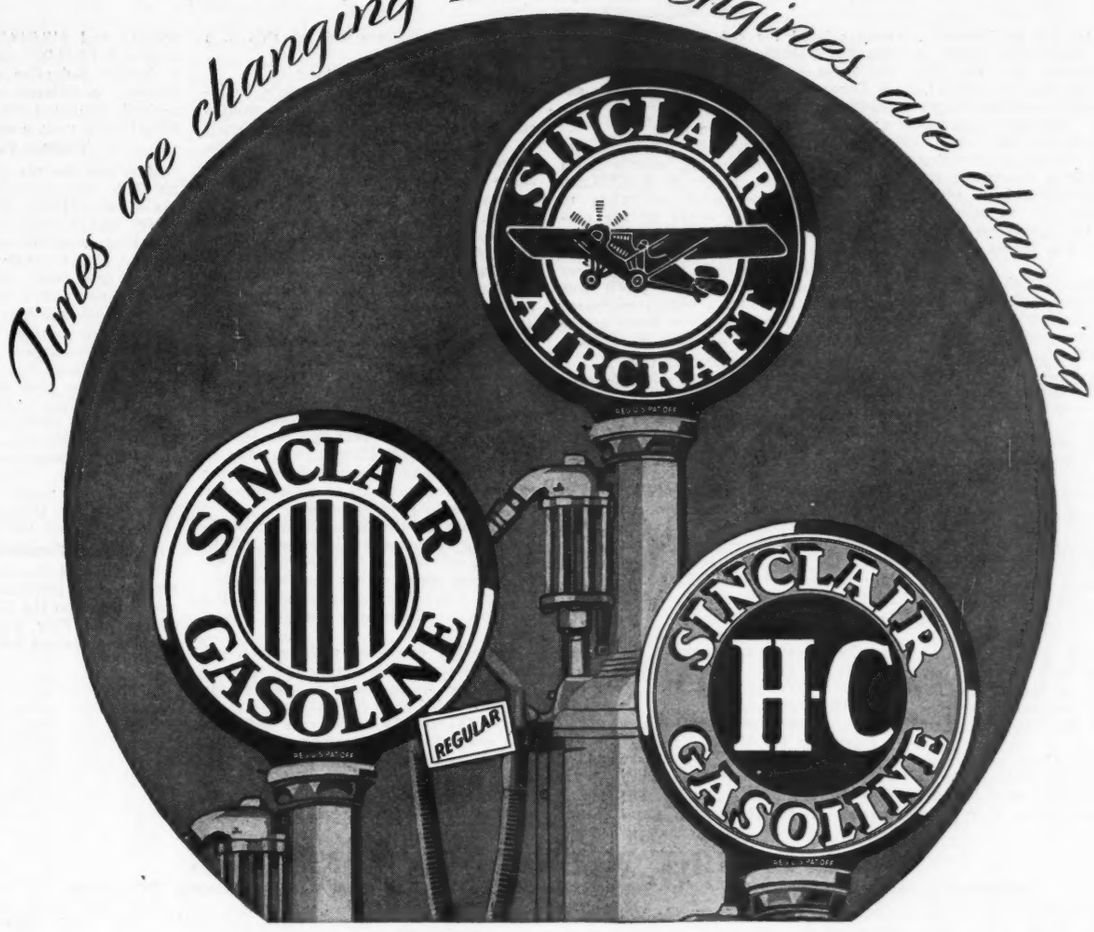
Lima (June 26, 1930)	$1.55
Wooster (June 26, 1930)	1.70
Illinois	1.65
Indiana (June 26, 1930)	1.32
Princeton	1.65
Plymouth	1.23
Western Kentucky	1.55
Midland, Mich.* (July 19)	1.45
Dundee, Mich. (April 16)‖	.....Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich. (April 16)‖	.....Same as Mid-Continent gravity scale
Saginaw, Mich. (April 11)†	.....Same as Mid-Continent gravity scale
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.50
Oil City, Ky. (July 25, 1930)§	1.35
Oil Springs (Canada) (June 28, 1930)¶	2.02
Petrolia (Canada) (June 23, 1930)¶	1.95

*Posted by Pure Oil Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment. Local refiners posted Mid-Continent prices on April 11.

MEXICAN CRUDE

Panuco*	$0.40

*F.o.b. ship, based on May transactions.



Marketing methods have changed, too! *Sell* SINCLAIR THREE-GAS SERVICE

There are today so many different types of engines—and so many different driving conditions in traffic and in the open—that one kind of gasoline today cannot be *exactly right* for *all* cars, and for *all* needs. It takes *three* different gasolines to meet all motoring demands, and wise motorists will buy their gas where they can *choose* from these three and get superior engine performance—give your trade these three and build increased gallonage.

Here's *Sinclair Aircraft Gasoline*, the *Ace* of high test gasolines, for the motorist who wants quick getaway, flashy acceleration and brilliant road performance. Sinclair Aircraft is the Ace of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

Here's *Sinclair H-C Gasoline* for those who want high compression performance—*who want to stop knocks and keep them stopped*—all gasoline, nothing added!

And here's *Sinclair Regular Gasoline* for those who prefer to pay three cents less per gallon and yet get gas that is full of eager power. The quality gasoline at a popular price! Sell Sinclair Three-Gas Service—get the jump on competition and earn a jump in gallonage.

SINCLAIR REFINING COMPANY, INC., 45 Nassau Street, New York—*Atlanta, Chicago, Houston, Kansas City*

Continental Shows $2,000,000 Profit

Gross Operating Income for First Six Months of This Year $46,024,512, With Total Operating Charges of $43,340,511

The Continental Oil Co. of Delaware, and its subsidiary companies, report a gross operating income for the six months' period of this year of $46,024,512.97, while the total operating charges were $43,340,511.61, leaving a net operating income of $2,684,001.36.

After the addition of the nonoperating income of $1,038,997.48, the profit for the period was $2,663,211.44 of which $19,391.15 was applicable to minority interests, leaving the Continental Oil Co.'s net profit for the period $2,643,820.29.

Included in the operating charges were provisions for property retirements, as follows: Intangible development costs, $2,576,901.23; depletion and lease amortization, $2,294,545.12; depreciation and other amortizations, $4,228,075.14; making a total of $9,099,521.49.

The total current assets were $54,988,137.33, representing a ratio to current liabilities slightly in excess of 9 to 1.

Buckeye Pipe Line

Buckeye Pipe Line Co. declared the regular quarterly dividend of $1, payable September 15 to stock of record August 22.

Consolidated Gas

The Consolidated Gas, Electric Light & Power Co. has been given permission by the Public Service Commission of Maryland to float a $7,500,000 issue of Series H 4½ per cent first refunding mortgage sinking fund gold bonds.

The issue will be used to retire outstanding bonds, and to extend and improve generally the company's service. An accounting will be required in six months.

The Public Service Corp. some time ago was given permission to issue Series F and Series G bonds totaling $5,407,500, but due to market conditions, they never were offered for sale, according to the company's petition for permission to sell the latest issue. The rate on the Series H issue, it was explained, is more advantageous to the company.

Prairie Pipe Line

The Prairie Pipe Line Co. and subsidiary report for the six months ended on June 30 net profit of $10,550,250 after charges and taxes, equivalent to earnings of $2.60 a share on the outstanding stock. This compares with net profit of $10,975,000 or $2.71 a share in the first half of 1929. For the three months ended June 30 net profit was $5,328,250, or $1.31 a share, compared with $5,575,000 or $1.38 a share in the three months ended on June 30, 1929.

Southern California Gas

Southern California Gas Corp. declared regular quarterly dividend of $1.62½ on the $6.50 cumulative preferred, payable August 30 to stock of record July 31.

Transcontinental Oil

Transcontinental Oil reports for the June quarter net profit of $1,188,746 after interest, depreciation, dry hole leases and properties abandoned had been charged off or provided for by reserve, but before federal taxes, equal to 35 cents on each of the 2,300,000 shares, against $1,173,869 or 36 cents a share in the preceding quarter and $1,188,271 or 24 cents a share on 3,355,533 shares in the June, 1929, quarter. For six months net profit was $2,362,617 before federal taxes, against $1,715,822 in the like 1929 half year.

Interstate Petroleum

Interstate Petroleum earnings for the first quarter of its fiscal year ended June 30 were approximately $157,211 before depreciation, depletion and federal taxes, W. H. Helmerich states. Comparisons are not available as this is a new company.

Atlantic Refining

Preliminary report of Atlantic Refining Co. and subsidiaries for six months ended June 30, 1930, shows net profit of $2,819,000 after reserves for taxes, depreciation, etc., equivalent to $1.05 a share (par $25) on 2,689,066 average common shares outstanding during the period. In first half of 1929, company reported net profit of $8,862,409, equal after dividend requirements on 7 per cent preferred stock then outstanding, to $3.67 a share on 2,222,222 average common shares outstanding during the period and to $3.06 a share on 2,666,634 common shares outstanding at end of the period.

Associated Gas & Electric

Accounted for largely by the widespread mergers which almost doubled the size of its system a year ago this spring, Associated Gas & Electric was able to report yesterday a new high record for earnings of this group of companies for the 12 months ended June 30.

Earnings for this period totaled $106,546,383. This was an increase of $44,985,690, or 73 per cent, over the corresponding period of last year when $61,560,693 was reported as shown by the company's consolidated earning statement.

Operating expenses, maintenance, all taxes, provisions for retirement of fixed capital, etc., amounted to $58,738,740 for the year ended June 30, leaving net earnings of $47,807,543, an increase of 92 per cent over the corresponding 12 months of 1929, when $24,904,759 was reported. After deducting underlying dividends and interest of $10,923,826, compared with $5,955,850, a balance remained of $36,883,817 and $18,948,909, respectively, a gain of $17,934,908, or 95 per cent. After a further deduction of $17,818,867 for interest, a balance of $19,064,950 remained, compared with a balance of $9,038,418 last year, a gain of 111 per cent.

Phillips Petroleum

Earnings for the quarter ended June 30, 1930, were as follows: Gross operating income, $14,651,250.90; expenses and costs, $8,779,370.75; net profit before depletion, depreciation and other amortization, $5,871,880.15; depletion, depreciation and other amortization $2,838,324.83; net profit, $3,033,555.32.

Net profit for the first six months of 1930 before reserves, amounted to $10,200,525.60, compared with $8,510,807.51 for the corresponding period of 1929. Net profit for the first six months of 1930, after all charges including depletion, depreciation and other amortization amounted to $4,638,399.19, which is equivalent to $1.70 per share on the average outstanding stock. Prices of oil and all products were much lower in the first six months of 1930 than they were in the same period last year.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

Feb. 26	46.71	May 14	51.67
Mar. 5	46.79	May 21	49.71
Mar. 12	48.30	May 28	50.98
Mar. 19	49.72	June 4	50.94
Mar. 26	51.00	June 11	46.65
Apr. 2	51.55	June 18	41.41
Apr. 9	53.26	June 25	42.37
Apr. 16	52.04	July 2	44.12
Apr. 23	53.39	July 9	44.11
Apr. 30	53.70	July 16	46.43
May 7	50.23	July 23	46.06

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 23 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
⅜	⅛	100	3/16	3/16	3/16	American Consolidated Oilfields		$11,018,000	$5	.....	.....	2 1/16	.55	1½	.53	72c	⅛
4½	1½	500	2⅜	2¼	2¼	American Marncaibo	(sh)	700,000	N.P.	.....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
1⅜	1	300	1¼	1¼	1¼	Argo Oil	(sh)	683,971	$10	.....	.....	2¾	1	4½	2¼	5	1½
21	17	100	17	17	17	British American (new, C.W.I.)		$1,311,321	N.P.	25cQ*	1- 2-30	40	20½	55	32¾	62	7⅞
2¾	¾	200	1⅛	1⅛	1⅛	Caribbean Syndicate (new)		$131,250	25c	.....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	24⅛	32,600	29⅝	29	29⅛	Cities Service	(sh)	24,290,359	N.P.	30cA†	1- 2-30	58¾	40¼	90⅞	54	68⅛	20
93⅞	88	200	90⅝	90⅝	90⅝	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	1- 2-30	95⅜	87	103½	94½	98¾	84
¾	¼	1,100	5/16	5/16	5/16	Colombia Syndicate		$2,000,000	$1	.....	.....	3⅞	1⅛	3¼	.76	2	½
5⅞	3½	200	3¼	3¼	3¼	Consolidated Royalty		$5,000,000	$10	15cQ	10-25-29	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	5½	600	6⅛	6⅛	6⅛	Creole Petroleum E	(sh)	5,977,873	N.P.	.....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	¼	1,000	¾	⅝	⅝	Crown Central	(sh)	587,000	N.P.	.....	.....	3	.50	3¼	.76	2½	¾
21¾	12	200	13	13	13	Darby Petroleum	(sh)	1,019.392	N.P.	25cQ	1-15-30	12	4	33½	3¼	26	6½
11	4½	600	7½	7½	7½	Derby Oil & Refining	(sh)	500,000	N.P.	.....	.....	2½	74	2¼	1	11	2
60	30	25	44¼	44¼	44¼	Derby Oil & Refining pfd.		$48,500	N.P.	.....	.....	16¾	4	21⅛	7½	44	20¾
166⅞	117⅛	1,200	128½	128½	128½	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	1- 1-30	118	86¼	165	101⅛	209	115
1¾	¾	200	⅞	¾	⅞	Intercontinental Petroleum		$5,682,000	$5	.....	.....	2½	.80	3⅜	1	2⅞	⅜
3	1⅝	600	1¾	1¾	1¾	Kirby Petroleum	(sh)	750,000	N.P.	.....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4¾	1⅛	200	1¾	1¾	1¾	Leonard Oil & Development		$50,000,000	$25	.....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
27	18⅝	100	22	22	22	Lion Oil & Refining	(sh)	250,000	N.P.	50cQ	1-31-30	27½	20	43⅞	20	38⅞	18
55⅞	34⅛	400	40¼	39⅞	40¼	Lone Star Gas	(sh)	5,000,000	N.P.	20cQ	12-31-29	59⅜	37	69⅛	48½	67⅞	28
½	⅛	100	¼	¼	¼	Magdalena Syndicate	(sh)	850,000	$1	.....	.....	2⅞	.80	1⅞	.50	1¼	⅛
16	12	100	12½	12½	12½	Margay Oils		$160,000	N.P.	50cQ	1-10-30	52	12	48½	32	38½	14
7½	2	200	3	3	3	Mexico-Ohio Oil		.....	.....	.....	.....	12⅛	5	8	2¾	6⅜	2½
¾	⅜	200	⅜	⅜	⅜	Mountain & Gulf		$4,000,000	$1	2cQ	1-15-30	1½	1	1¾	.76	1½	¼
12⅛	8	200	8⅞	8⅞	8⅞	Mountain Producers		$1,682,182	$10	40cQ	1- 2-30	29¼	22¾	28⅞	19½	22⅞	7
3½	2⅜	100	2½	2½	2½	New Bradford Oil		$1,095,291	$5	12½cQ	1-15-30	5⅞	4⅝	5⅝	4¼	5	2½
7¼	3⅛	100	3⅛	3⅛	3⅛	New Mexico & Arizona		$1,000,000	$1	.....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	6	200	7½	7¼	7½	North Central Texas	(sh)	400,000	N.P.	15cQ	12- 2-29	12¾	9½	14¼	8½	18½	6¼
2½	½	2,400	⅞	⅝	⅞	Pandem	(sh)	489.875	N.P.	.....	.....	9⅜	3¼	6	2⅛	3½	½
4⅜	1⅞	100	2⅛	2⅛	2⅛	Pantapec Oil	(sh)	1,506,000	N.P.	.....	.....	12⅛	7	15⅝	8½	10½	1⅞
..	..	No sales.				Pennok Oil		$150,000	N.P.	.....	.....	13½	5⅛	7¾	4⅞	7¾	4⅜
10½	8⅛	100	8⅛	8⅛	8⅛	Red Bank Oil	(sh)	250,000	N.P.	.....	.....	24⅜	7	18	4⅞	16	9⅝
5⅜	2⅛	300	4	3⅞	3⅞	Reiter-Foster	(sh)	388,584	N.P.	10cQ	12- 9-29	15½	3½	12⅞	4⅛	8½	1⅜
8⅝	3⅝	100	4¼	4¼	4¼	Ryan Consolidated	(sh)	500,000	N.P.	.....	.....	7	4½	12	4⅛	11	3
2½	1⅜	200	1⅜	1⅜	1⅜	Salt Creek Consolidated	(sh)	1,286,300	$10	10cQ	1- 2-30	8	5¼	7¼	5½	5⅞	1⅞
15¼	8¼	100	10½	10½	10½	Salt Creek Producers	(sh)	1,496,859	$10	50cQ	2- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750,000	$5	.....	.....	7	1¼	3½	1	2½	⅛
..	..	No sales.				Transcontinental pfd.		.....	.....	.....	.....	..	..	..	..	..	..
4½	2	100	2⅜	2⅜	2⅜	Venezuelan Petroleum	(sh)	755,090	$5	5cQ	11-15-29	7⅜	4¼	9⅛	4¾	6½	1⅜
5	2	300	4	4	4	Woodley Petroleum		$500,000	$1	.....	.....	7	4⅜	8¼	4⅞	9½	2
2½	½	200	1	1	1	Y Oil & Gas		$100,000	N.P.	.....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 23 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
18½	12¼	400	18½	18⅜	18½	Anglo-American Oil (vot. C.O.D.)		£4,192,635	£1	.36⅞	11-27-29	21⅝	17⅞	22⅜	14⅞	17	11
1	⅜	300	½	½	½	Atlantic Lobos		.....	....	.....	.....	..	..	..	..	..	..
25	14	100	20	20	20	Borne Scrymser		$1,000,000	$25	$1SA	10-15-29	59	50	56½	44½	46½	25
69	55¼	200	56	55¼	55¼	Buckeye Pipe Line		$10,000,000	$50	$1Q	12-14-29	60	45	76	53	74¼	55
184⅞	140⅛	100	154	154	154	Chesebrough Mfg.		$3,000,000	$25	$1Q*	12-30-29	126	76½	161	117	210	130
17¾	10	500	10	10	10	Continental Oil (V.T.C.)		$36,057,840	$10	.....	12-15-27	22⅝	16¼	23	16	29	10
65¾	30½	50	35	35	35	Cumberland Pipe Line		$1,500,000	$50	$1Q	12-15-29	137	89	114	67	75¾	40
54¾	40	x10	40	40	40	Eureka Pipe Line		$5,000,000	$100	$1Q	11- 1-29	68½	47	88	64⅛	70½	42
7	2½	500	4	4	4	Galena Oil Corp.		$16,000,000	$100	.....	.....	13½	3½	13	4¼	6½	3
119	78	400	91⅛	91	91	Humble Oil & Refining		$74,103,300	$25	50cQ	1- 1-30	68½	54	114¾	59¼	128	74⅛
320	303	100	320	320	320	Illinois Pipe Line		$20,000,000	$100	$10SA	12-16-29	182	123¾	290½	176½	340½	260
30	18⅛	300	20⅜	20	20⅜	Imperial Oil of Canada (new)	(sh)	26,421,768	N.P.	12½cQ	12- 2-29	64¾	37¾	104	56¾	41	22
41	31⅞	500	33¼	33	33¼	Indiana Pipe Line		$3,000,000	$10	50cQ‡	2-15-30	94½	61	91⅞	74⅜	41⅞	26
24	17⅝	300	19¼	19⅛	19¼	International Petroleum	(sh)	14,247,088	N.P.	12½cQ	12-16-29	29	28¼	55	35	30⅜	15
22⅜	15⅛	700	16⅝	16⅝	16⅝	National Transit		$6,362,500	$12.50	25cQ‡	12-16-29	24	13½	32⅜	19⅜	25⅛	10½
21⅜	10⅛	1,200	18	15	16¼	New York Transit (new)		$1,000,000	$10	40cQ†	1-15-30	44½	31¼	75	38½	17½	10
54	35½	50	37½	37½	37½	Northern Pipe Line		$2,000,000	$50	$2SA	1- 2-30	100	70	69	56½	63	41
34⅛	32½	1,400	33	32⅞	33	Ohio Oil (new W.I.)		$60,000,000	$25	5cQ‡	12-14-29	67⅞	52	84	58½	79⅞	64⅛
32	17	100	19⅞	19⅞	19⅞	Penn Mex Fuel		$10,000,000	$25	50cQ	12-14-29	39	12	84	28	44½	20
33	15	200	15	15	15	Solar Refining		$4,000,000	$25	$1.25SA	12-20-29	..	..	..	..	50	29
20⅞	13	200	16⅞	16⅞	16⅞	Southern Pipe Line		$1,000,000	$10	50cQ	.....	27¼	15½	19	15	22½	13
45⅞	35	100	37½	37½	37½	South Penn Oil (new)		$30,000,000	$25	50cQ	12-30-29	41½	35	71⅞	36¾	60¼	35⅛
65	35	100	45¼	45¼	45¼	Southwest Pennsylvania Pipe Lines		$1,750,000	$50	$1Q	1- 10-29	83	55½	102	70	70	60
59⅞	47⅝	4,700	51¼	50⅜	51	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	12-16-29	81½	64⅜	95⅞	70⅞	63	45
40½	30⅛	1,700	32½	32⅛	32⅛	Standard Oil of Kentucky		$25,654,516	$10	40cQ	12-16-29	130	111½	179¾	122¼	46⅞	29
48⅞	44⅛	300	46½	46⅛	46⅛	Standard Oil of Nebraska		$4,649,225	$25	62½cQ‡	12-20-29	49½	40	54⅞	39⅞	50¼	40
108½	77	150	80	79¾	79¾	Standard Oil of Ohio		$14,000,000	$25	62½cQ	1- 2-30	87½	72	134	71	129	60
10	7	100	7	7	7	Swan-Finch Co.		$861,466	$25	.....	12- 2-29	21	14½	23½	16	18	10
97⅞	76¼	800	88⅞	88	88⅝	Vacuum Oil Co.		$126,180,350	$25	$1Q	12-20-29	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 23 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	500	24¼	24	24¼	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17½
37	15¼	300	20½	19⅞	20½	American Republic Corp.	(sh)	209,180	N.P.	.....	3-20-29	82½	35⅛	85	51⅛	64¾	12½
51	32½	50	51	51	51	Associated Oil		$57,260,300	$25	50cQ	12-31-29	50¼	35	53⅜	37½	47¼	34½
51⅜	30⅛	5,500	36¾	35½	36⅝	Atlantic Refining		$66,763,775	$25	25cQ	12-16-29	131¾	104	66⅜	50	77⅞	30
34	20½	700	24½	23¾	24	Barnsdall Corp. A		$56,546,600	$25	50cQ	12- 7-29	35½	20¾	53	20	49⅛	20
30½	18⅜	5,100	22⅜	21⅜	21¾	Continental Oil of Delaware	(sh)	4,741,554	N.P.	.....	3-31-27	..	..	..	..	47⅛	18
71⅛	38⅝	700	46½	46⅛	46½	General Asphalt	(sh)	413,333	N.P.	50cQ	.....	96¾	65	94⅞	68	94¾	42¼
116⅞	52¼	13,500	89	87	87½	Houston Oil		$24,968,600	$100	.....	.....	175¾	60⅛	167	79	109	26
32	19⅜	300	22½	22½	22½	Independent Oil & Gas	(sh)	1,362,295	N.P.	50cQ	1-31-30	32¾	17⅝	38⅜	21¾	39⅜	17¾
28⅜	8¾	5,300	14½	13⅞	13⅞	Indian Refining		$12,565,070	$10	.....	5-31-24	12⅛	7⅝	39⅝	9	53	13⅛
29½	21¼	200	29¼	29¼	29¼	Lago Oil & Transport	(sh)	3,992,122	N.P.	.....	5- 1-27	37¾	20½	39¼	27¾	38⅜	16½
12	8	2,000	9¾	9⅜	9¾	Louisiana Oil Refining	(sh)	1,190,063	N.P.	.....	.....	18⅛	10	19¾	9⅜	18	7
10⅝	4½	400	5	5	5	Maracaibo Oil	(sh)	330,000	N.P.	.....	.....	22¾	12	25½	12½	18½	5⅛
37	16⅛	13,500	24½	23⅝	23¾	Mexican Seaboard	(sh)	1,244,383	N.P.	.....	12-15-20	9¼	3	72	4⅝	69⅜	8¼
33	22⅛	400	24¼	24	24¼	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	39⅜	25½	44½	25⅛	39⅞	22⅛
2½	⅞	200	1¼	1	1¼	Middle States ctfs.		$23,736,130	$10	.....	7- 1-23	3¾	1⅝	7⅜	2⅜	5⅛	¾
64¼	51⅝	200	59½	59	59½	Pan American P. & T.		$50,084,700	$50	.....	10-20-27	65⅞	40⅛	50⅞	38¼	69	40½
67½	50½	1,000	59¼	58⅞	59¼	Pan American P. & T. "B"		$121,110,650	$50	.....	11-15-24	66⅜	40¼	58⅞	37⅜	69¼	40½
..	..	No sales.				Pan American Western "B"		$400,000	N.P.	.....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	4⅛	200	8	8	8	Panhandle P. & R.	(sh)	199,370	N.P.	.....	.....	18⅞	8	21¾	11½	15¼	3
80	47½	100	73	73	73	Panhandle P. & R. pfd.		$2,564,400	$100	.....	7- 2-23	83	54	108	70	76	47½
44¾	29⅛	6,600	33⅞	33⅛	33¾	Phillips Petroleum	(sh)	2,593,075	N.P.	50cQ	1- 2-30	60¼	36¼	53⅞	35¼	47	24¼
..	..	No sales.				Phillips Petroleum rts.		.....	....	.....	.....	..	..	..	..	..	..
2½	1	600	1¼	1⅛	1⅛	Pierce Oil Corp.		$29,622,831	$25	.....	.....	1⅛	½	5¼	½	3⅜	1
7⅛	2¼	100	5½	5½	5½	Pierce Petroleum	(sh)	2,500,000	N.P.	.....	.....	5½	2½	7	3½	5⅞	½
54	35⅝	200	38½	38	38	Prairie Oil & Gas		$60,848,000	$25	50cQ*	12-31-29	55½	45⅝	68	46	65⅝	40½
60	44⅛	1,400	48	47⅝	48	Prairie Pipe Line		$101,250,000	$25	75cQ†	12-31-29	190	130¾	280	172	65	45
11⅞	6½	100	8	8	8	Producers & Refiners		$37,438,950	$50	.....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	30	70	35	35	35	Producers & Refiners pfd.		$2,845,350	$50	.....	5- 1-25	50	36⅞	49⅝	41	46¾	25½
27¼	19½	1,400	22	21⅝	21⅝	Pure Oil		$75,959,250	$25	37½cQ	12- 2-29	33½	25	31⅝	19	30¾	20
28¼	14¾	9,200	17⅝	17	17½	Richfield Oil		$52,410,875	$25	50cQ	11-15-29	28⅝	25⅜	56	23	49⅝	20
25¾	15⅝	600	17¾	17¼	17½	Rio Grande Oil	(sh)	1,236,270	N.P.	$2A	7-25-29	..	..	37½	32	42½	15
56½	49⅛	500	53⅞	53⅝	53⅝	Royal Dutch, N. Y.	(sh)	611,303	$1.873	.....	9-13-29	54½	44¼	64	44⅝	64	43⅛
48⅜	42⅜	50	44¼	44¼	44¼	Shell Transport & Trading Co.		£23,985,000	£1	$1.45	7-23-29	48⅝	40½	47⅞	41⅜	51½	40⅝
25½	18	2,100	19⅜	19	19¼	Shell Union Oil	(sh)	13,066,497	N.P.	35cQ	12-31-29	31⅜	23⅝	39¼	23¼	31¾	19
37	18	200	22¾	22½	22½	Simms Petroleum		$8,353,620	$10	40cQ	12-14-29	25⅜	14¼	27¼	18⅛	40⅛	15
32	20	7,100	25	24⅝	24¾	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ	1-15-30	22⅜	15	46¾	17⅜	45	21
121¼	108	200	111	111	111	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-15-29	104½	97	110	102½	111	103
42	28½	1,800	31⅝	31⅛	31¼	Skelly Oil		$27,441,250	$25	50cQ	12-16-29	37⅜	24⅛	42⅝	25	40½	28
75	55½	3,600	63¼	62¼	63	Standard Oil of California	(sh)	12,594,098	N.P.	62½cQ	2-15-30	60¾	50⅜	80	63	81⅞	51½
49	29	300	34	33½	33½	Standard Oil of Kansas		$8,000,000	$25	50cQ	12-16-29	20⅞	14⅝	37¾	15	33¾	18
84⅞	58	96,000	75	73¾	74⅛	Standard Oil of New Jersey		$634,999,200	$25	25cQ*	12-16-29	41⅜	35⅛	59⅜	37⅜	83	49
40⅜	30	3,400	33⅛	32⅞	32⅞	Standard Oil of New York		$445,223,675	$25	40cQ	12-16-29	34⅛	29¾	33¼	28¾	48⅛	31¾
70	50	200	58⅝	58½	58⅝	Sun Oil	(sh)	1,416,869	N.P.	25cQ	12-16-29	34⅞	30	77	31½	86⅜	55
9⅜	5	1,300	5½	5	5	Superior Oil Corp.	(sh)	776,979	N.P.	.....	12-20-20	..	..	..	..	24	5¼
60½	50⅛	4,800	53⅝	52¾	53⅝	The Texas Corporation		$246,204,900	$25	75cQ	1- 1-30	58	45	74¾	50	71⅞	50
14½	8¼	700	9⅜	9	9¼	Texas Pacific Coal & Oil Co.		$9,304,890	$10	2½%A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9½
31	19½	200	30¾	28¾	30¾	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	12-31-29	29⅛	19	41½	19⅝	40	14
94⅞	85½	100	85¼	85	85	Tide Water 5½% pfd.		$19,947,000	$100	$1.25Q	11-15-29	90⅛	85	100⅛	86	97½	85⅛
17⅜	10⅜	900	14¼	14⅛	14¼	Tide Water Associated	(sh)	5,560,424	N.P.	30cS	2-15-30	19⅛	15¾	25	14¾	23½	10
89¾	78	200	83¼	83¼	83¼	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	2- 2-30	..	..	..	..	90⅞	74⅛
24	16¼	2,100	18¾	18½	18½	Transcontinental Oil	(sh)	3,742,029	N.P.	.....	.....	10⅜	3¾	14¾	7¼	15¼	5⅛
50	37	200	41¾	41	41	Union Oil of California		$104,342,375	$25	50cQ	11- 9-29	56½	39⅝	58	42⅜	57	42⅛
38½	25¼	200	29⅞	29⅞	29⅞	Union Tank Car	(sh)	1,254,048	$100	$1.25Q	12- 2-29	127½	94	128⅛	110	163¾	121⅞
27	12¾	1,200	13¾	13½	13¾	Warner-Quinlan	(sh)	632,948	N.P.	50cQ	1- 2-30	34½	24½	44⅞	26	42⅞	15
..	..	No sales.				White Eagle Oil & Refining	(sh)	505,100	N.P.	50cQ	1-20-30	27½	20	38	20⅛	38	25
21	11½	100	16½	16½	16½	Wilcox Oil & Gas	(sh)	428,907	N.P.	.....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. x Ex-dividend.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

ALUMINUM ALLOY TANK TESTS BEING PLANNED

(Continued from Page 202)

on Flammable Liquids. A special subcommittee of the association, appointed to co-operate with the special subcommittee on aluminum alloy for truck tanks, representing the committee on automotive transportation of the Institute, found it impossible to render a definite decision as to the adequacy of a tentative test program and the committee on flammable liquids consequently decided to accept a tentative program submitted by the Institute. After reviewing the results of the test the association committee will express its opinion as to the suitability of aluminum for use for gasoline truck tanks.

Generally the test program calls for testing aluminum alloy tank compartments each having a capacity of 150 gallons. One compartment filled with water is to be subjected to a drop test of 25 feet. One compartment is to be subjected to a hydrostatic test of failure. Two compartments simultaneously are to be subjected to a fire test simulating actual truck fire conditions, with the flames fed by gasoline. Provisions are to be made for time, temperature and pressure measurements.

The report on the test is to show complete data on the chemical analysis and physical properties of the alloy used in the construction of the compartments; complete data on the process used in the fabrication of the compartments, with detailed recommendation covering welding procedure; complete narrative account of all three tests, accompanied by photographs, charts and tables containing data on pressures, temperatures and fuel supplied; and a brief summary in which shall be stated the conclusions which may be drawn and the recommendations which may be proposed as a result of the tests.

ROCKY MOUNTAIN AREA

(Continued from Page 196)

15-SD-2, in the second Sundance at 2,842 feet with a production of 46 bbls. the first day. Midwest Refining Co.'s No. 29-DT, NW, Section 35-40-79, the Salt Creek deep test, is drilling at 4,913 feet in an unidentified formation, which may be the top of the Deadwood. Midwest's No. 11 Middy, NE NE, Section 23-35-79, Midway Dome, is drilling at 4,960 feet in hard black sticky shale and is believed to be drawing close to the Second Wall Creek sand, the first objective. Wyalta Oil Co.'s No. 4 Smith, Section 11-38-78, east of Teapot, is drilling at 600 feet, and Wind River Oil & Gas Co.'s No. 1 DeLong, NE SE, Section 9-38-78, west of Teapot, is bottomed at 3,157 feet and underreaming to shut off water from the first Wall Creek. Chicago Oil Co.'s No. 3, SW, Section 1-33-83, Poison Spider, is drilling at 3,180 feet in top of Madison lime. It had a show of oil in the Amsden. Bessemer Oil Co.'s No. 6, NE, Section 18-33-83, cemented the 6⅝-inch at 1,370 feet. It is checking 20 feet higher than other wells on the lease.

Converse County

John Ackard's No. 2, SW cor. NE, Section 28-31-69, McKinley Switch, is reported abandoned at 3,500 feet. It was started several years ago as a doodlebug location. At 2,695 feet it was reported 1,100 feet in the granite. It was claimed that at 3,070 feet it went out of granite into a black formation, but geologists never believed the well had any chance. The same operator is starting another well on the John Morton Estate ranch, 6 miles north of Douglas. Weisman Big Muddy Oil Co.'s No. 1, SW SE, Section 6-33-76, east end of Big Muddy Field, set 12½-inch at 1,165 feet and will drill deeper. It had some oil in the Hygiene at this depth.

Carbon County

Midwest Refining Co. has a producer in its No. 31 Eades, SW cor. SE, Section 1-18-78, on the Dutton Creek Dome, in Carbon County. At a total depth of 4,880 feet it had 2,300 feet of oil in the hole from the Muddy sand. It swabbed 125 bbls. the first day. This is the second well drilled on the structure by the Midwest. In 1925, it put down a test which found the Muddy sand at 4,876-98 feet. It made 65 bbls. initial of 34 gravity light oil. It was drilled to 5,115 feet and both the Dakota and Lakota were water bearing. The hole was in bad shape and the well did not fully indicate the possibilities of the sand. It held up close to the original production for a long time and two years later was averaging 43 bbls. a day. The second well was started a year ago and was believed to be a little higher on the structure. The subsurface geology proved it to be lower than No. 1, but it turned out to be a better well. The oil is run through a 3-mile connection to the Illinois Pipe Line Co.'s line from Rock Creek to Rock River. The Producers & Refiners Corp.'s No. 3, SE NW, Section 2-19-88, Hatfield Dome, is drilling at 4,085 feet in hard sand. This was a small gas well in the Dakota at 3,956 feet. Producers & Refiners' No. 4, Section 7-26-89, Wertz Dome, is rigging to pull tubing, and its No. 16, Section 25-26-87, Ferris Dome, is drilling at 2,990 feet in the red beds.

Fremont County

A deal in which the Atlantic-Pacific Oil Co. acquired 1,000 acres on the north side of the Dallas Dome, in Fremont County, from the Burnside Oil Co., of Somerset, Pa., was announced this week by Walter S. Clute, general manager. The Atlantic-Pacific company a few weeks ago took over the holdings of the Dallas Dome Wyoming Oil Fields Co., south of Lander, embracing 2,000 acres on which are 30 wells, and is conducting an extensive drilling campaign. The shallow wells are averaging 30 bbls. a day, and two wells in the Tensleep formation have been producing around 300 bbls. Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is drilling at 4,417 feet and is through the Dakota sand which made 12,000,000 feet of gas and sprayed about 24 bbls. of oil. It had some high grade oil in the Muddy, but this formation consisted of shale only. The next objective is the Lakota. General Manager A. R. Wilson and Geologist H. A. Stewart are at the well. This test, the second to reach the Dakota series, is about a mile north of the discovery well which made 600 bbls. a day of green oil from the Muddy shale. Producers & Refiners' No. 10, Section 14-32-95, Sand Draw, is drilling at 3,353 feet in dark sandy shale. This is the first well on this structure to get through the big gas in the Frontier in several tests started in the past 10 years to explore the lower horizons for oil. Producers & Refiners' No. 2, SE NW, Section 33-34-92, Muskrat Dome, is shut down at 3,437 feet for boiler repairs, and its No. 1 State, Section 16-33-91, is coring at 193 feet in shale. Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte Dome, has sidetracked bit at a total depth of 3,735 feet and is standing cemented.

Lincoln County

Midwest Refining Co.'s No. 1 Larcher, SE SE, Section 25-37-117, Little Grays River, is drilling at 2,064 feet in red sand with the hole full of water. Fontenelle Production Co.'s No. 1 Neil, SE NW, Section 14-24-113, Fontenelle Dome, is preparing to resume at 370 feet after being idle since last winter.

Uinta County

Park City Oil & Gas Co.'s No. 1 Christensen, NE cor., Section 6-15-113, Lyman district, is drilling below 2,000 feet and near the top of the Shannon, the producing sand at La Barge.

Niobrara County

Argo Oil Co.'s No. 7 Wehopeso, C SW NW, Section 19-39-60, started a year ago to test the Sundance sand in the Mule Creek Field, ran into gas at 2,864 feet in gray lime which had sufficient pressure to clean the hole when the tools were pulled. The hole was standing full of salt water. The gas was inflammable and will be tested to determine if it has any helium. The Mule Creek Field, operated by the Argo and Ohio Oil companies, has produced light oil from the Lakota sand at around 1,200 to 1,400 feet for a number of years. Water was found in the Sundance and it was decided to continue drilling. The Embar (Minnelusa) at 2,660-65 feet had water and water also was found in the Tensleep topped at 2,665 feet. The horizon in which the gas was found was the Tensleep. The formation is 600 feet thick at the outcrops. The Madison lime lies below the Amsden. The Bowser-Satterfield Syndicate is moving in for its No. 1, Section 7-35-62, Sage Creek Dome, Old Woman Creek anticline. Norbeck & Nicholson drilled a well in the NW cor., Section 9-36-62, in 1917, which had some gas in the Sundance and a show of black oil at 1,412 feet. John Malcolm and others drilled a well in the C NE NE, Section 13-35-62 in 1927 which stopped at 780 feet. Ohio Oil Co.'s No. 1 Converse Sheep, SE SW SE, Section 32-36-65, is skidding rig 50 feet to west and starting No. 4 Converse Sheep which will be drilled with a rotary. This will be the third attempt to test the lower horizons in Lance Creek. Nos. 1 and 2 Converse Sheep, old wells, were drilled down but both were lost before reaching the Sundance. Lance Creek produces from sands in the Dakota. The Sundance, Embar and Tensleep have never been tested.

Weston County

The James McCullough lease in the Osage Field, on which a good producer recently was completed, has been sold to the Wytex Oil Co., of Portland, Ore., for a reported consideration of $115,000. It comprises the E NE SW NE, Section 23-36-64, and SW NW, Section 24. McCullough's No. 1 Logan McCullough, NW NE NE, Section 23-36-64, which was included, was completed last month and flowed at the rate of 200 bbls. a day until shut in. Location has been made for No. 2 in the CNL NE NE, Section 23. Hugh Updike & Sons' No. 1 Updike, NE cor., Section 14-46-64, was shot with 37 quarts and a dry sand at 1,532-60 feet was turned into a producer, flowing 30 bbls. in five hours. It then bridged. When cleaned, it is expected to flow as there is heavy gas pressure. Lambie Oil Co.'s No. 1 Julius Bock, SE SW NE, Section 14-46-64, which recently put 3,400 bbls. into the pipe line in a week, continues to flow steadily at the rate of 13 bbls. per hour. Yellowstone Petroleum Co. is the successor to the Oregon-Wyoming Oil Co. Its No. 1, SE cor. NE, Section 25-46-64, found the sand at 1,427-62 feet and will pump around 30 bbls. a day. Lambie Oil Co.'s No. 2 Bock, SW NE, Section 14, is ready to spud, and Curtis & Straitiff's No. 2 Updike, SE cor. NW, Section 14, cemented casing at 1,550 feet and is preparing to drill in. Osage Trust Co.'s No. 4, NE NW SE, Section 14, is ready to spud. Carl Cundy's No. 1, NW NE, Section 31-46-63, is drilling at 250 feet, and Osage-Wyoming Oil Co.'s No. 1 Witzell, SE NE NW, Section 30-46-64, is drilling at 1,600 feet. M. K. Mouser's No. 1 Bock, NW cor., Section 2-46-64, is drilling at 1,135 feet, and Tom Don's No. 4, NW SE, Section 20-46-63, is running casing at 1,140 feet. Wesco Oil Co.'s No. 6 Fee, NW NE SE, Section 13-46-64, found the sand at 1,455-61 feet and will run casing before deepening and shooting. Dornacher and others' No. 2, SE SE, Section 12-46-64, is drilling at 710 feet. A new location is Bradley-Manewal's No. 10, CEL SW NW, Section 20-46-63.

MONTANA

In the Border Field, the Ohio Oil Co.'s No. 2 is making about 3,000,000 feet of gas and is showing for a commercial well in oil production. This well extends the Border Field about a mile west on the Montana side of the line. A new well has been started still further west by the Nellie Jane Oil Co. on the Farbo lands and is drilling about 400 feet.

On the Canadian side of the line considerable activity is shown in the western part of the field. The Adanac Oil Co. of Medicine Hat is making arrangements for eight tests to be drilled on its holdings. The Celtic Oil Co. and the Dixie Oil Co. are both drilling and the Capitol Oil Co. is drilling its No. 1 deeper into the lime. No. 2 Monalta is running a string of pipe at 2,513 feet to the top of the sand and will drill in as soon as the casing is set. No. 1 Monalta is being deepened. The Omega Oil & Gas Co. is spudding in a test, and Askalta Oils, Ltd., is also spudding in a new test.

The Sunburst Field reported one commercial oil well and one dry hole for the past week. The Medford Oil Co.'s well on Section 24-34-2 will make around 10 bbls. daily, but the Raymond interests' well, on Section 10-34-2, is a dry hole. Four tests are drilling in the Sunburst Field.

ROCKY MOUNTAIN PRODUCTION

Daily average pipe line runs from the various pools in the Rocky Mountain area for the week ending July 26:

WYOMING	
Salt Creek	29,970
Frannie	200
Big Muddy	2,050
Oregon Basin	2,860
Dutton	50
Elk Basin	900
Byron	10
Warm Springs	150
Lovell	20
Ferris	60
Grass Creek	2,070
Hamilton	920
LaBarge	1,850
Lance Creek	140
Lost Soldier	960
Osage	1,500
Poison Spider	160
Rock River	2,090
Simpson Ridge	70
Teapot Dome	30
Dallas-Derby	260
Hudson	250
South Casper Creek	1,130
Total	47,700
MONTANA	
Cat Creek	1,130
Kevin-Sunburst	5,920
Pondera	2,220
Lake Basin	50
Border	400
Total	9,720
COLORADO	
Moffat	1,134
Fort Collins	1,218
Florence	457
Iles	1,123
Tow Creek	398
Boulder	25
Rangley	50
Total	4,405
NEW MEXICO	
Hogback	480
Rattlesnake	2,600
Table Mesa	670
Artesia	702
Cap Rock (Maljamar)	798
Jal	1,414
Hobbs High	32,886
Lea City	4,725
Miscellaneous (Lea County)	375
Total	44,650
Grand total	106,485
Week ending July 19	105,975
Difference	510

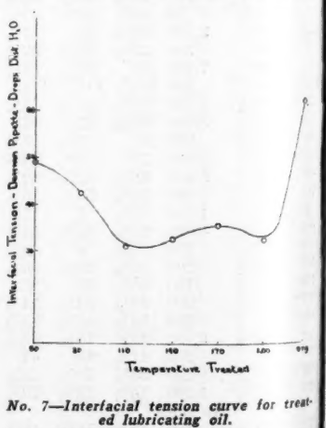
ACID REFINING OF PARAFFIN BASE OILS

(Continued from Page 64)

made on each of the samples by standard methods:[6] index of refraction, flashpoint, firepoint, viscosity, color, tars and olefines, coefficient of friction,[9] pour test, surface tension, emulsification with water, Conradson carbon, ash and interfacial tension. The results obtained are tabulated in the following table:

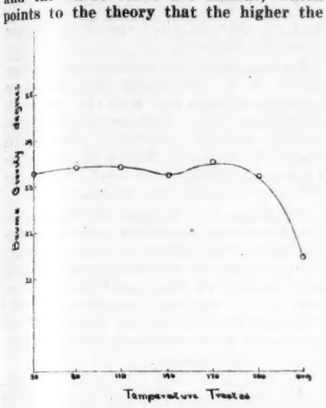
Refinery Losses

The data from these tests were plotted on co-ordinate paper against the temperatures at which the various samples were treated. The refining loss curve is the first to be taken into consideration, as it is by far one of the most important fac-



No. 7—Interfacial tension curve for treated lubricating oil.

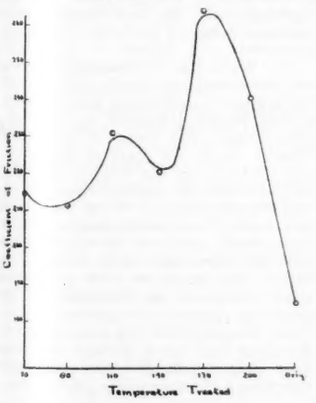
tors in this process. It seems as if at higher temperatures less oil is adsorbed by the sulphuric acid. Since this is so, the sulphuric acid is able to react with the unsaturated hydrocarbons and therefore yield a better oil with a much smaller loss as indicated by the curve.[1] If the above statement is true, the viscosity of the original should be highest and all the other samples should decrease correspondingly as the temperatures. By studying the viscosity curve the above statement is found to be true. The viscosity curve and tar value curve are similar, which points to the theory that the higher the



No. 8—Gravity curve for treated lubricating oil.

molecular weights of compounds present in an oil and the more unsaturated they are, the more viscous the oil. If in solution in the oil there are polymerized complexes or molecules of complex structure present, then this viscosity should be abnormally high, or if these are absent the viscosity should be low.

The Conradson carbon curve shows the highest amount of Conradson carbon at the 50° treat, which indicates that the treat at 50° is not as efficient as those at higher temperatures because the heavier complexes and polymerization products have not been completely removed. The results obtained by the tracts at



No. 9—Coefficient of friction curve for treated lubricating oil.

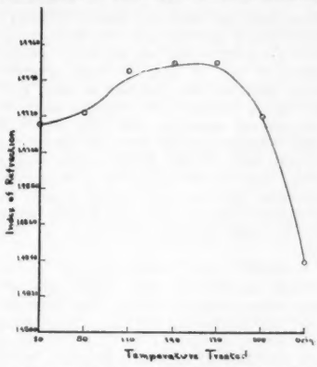
other temperatures are approximately the same.

The breaks in the ash curve are due to the suspended colloids of mineral type and not due to soaps, as is often the case after oils have been treated. If soaps were causing the variation, there would have been some emulsions formed in the emulsification tests, but this was not true. Curves obtained by plotting the ash curve against other factors do not indicate that any relations exist, while if the ash had been due to dissolved soaps there would have been some relationship.

By studying the color curve, we find that the 50° F. point is very high, which shows that at low temperatures the sulphuric acid could not act as well on the color-producing compounds as at the higher temperatures. At the 200° F. point the color is high, which indicates the fact that at excessively high temperatures the sulphuric acid acts on the oils forming oxidation or sulphonation products giving the oil a bad color, or the tars are redissolved.

The interfacial and surface tension play an important part in the treating and use of lubricating oils because of their influence upon the tendency of the oil to emulsify. The interfacial tension determines the ability of the oil to penetrate between two surfaces and produce a lubricating film which will protect the metal. The higher the interfacial tension of oils the greater will be the covering surface property which is desired in lubricating oils. By treating at the higher temperatures, the interfacial tension is lowered.

The variation of temperature during treatment has no effect on the surface tension. A study of the relation between the variation of temperature in treating



No. 10—Index of refraction curve for treated lubricating oil.

and the A.P.I. gravity shows that with an increase with higher temperature seems to indicate that unsaturated hydrocarbons and asphaltic substances are progressively removed and brings about this change. The curve is entirely normal and is in excellent accord with the theory.

Conclusions

The experimental data indicate that a treatment at 170° F. would be the most efficient for the production of the satisfactory lubricating oils.

The treatment of oil above 170° F. or below 110° F. is not recommended.

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(1) Gurwitsch Petroleum Technology, p. 319-320.
(2) F. Schulz Petroleum 5, Nos. 4 and 5.
(3) Brooks, Non-Benzenoid Hydrocarpon, p. 130-132.
(5) Kansas City Testing Lab. Bulletin 17.
(6) J. I. E. C. 14—682.
(Using refined olive oil as a basis for comparison gave a static coefficient of friction of .148.) Also see Archbutt and Deeley, Lubrication and Lubricants, J. I. E. C. 14—682, 626.

REASONS FOR SOCONY-VACUUM OIL MERGER

(Continued from Page 56)

as making essential a further integration of Socony's activities. Royal Dutch-Shell, he stated, is strategically in a dominant position in foreign markets, and consolidated foreign marketing facilities of Vacuum and Socony would tend to improve the position of the two American companies in competing for world business.

The New York hearing has been under way for several weeks in the Federal Building and in judicial chambers in the Woolworth Building before former Judge Fred L. Williams of St. Louis, special master. The government's suit is in the nature of a contempt proceeding alleging an intended violation of the decree of the United States supreme court in 1911 dissolving the parent Standard Oil Co. of New Jersey, of which both Vacuum Oil Co. and Standard Oil Co. of New York were former units. The defense of the defendant companies has been that petroleum market conditions have so changed in recent years due to the intensified competition incidental to the growth of competing companies that a monopolistic condition such as was shown in 1911 would not be created by the proposed consolidation of Socony and Vacuum.

OIL IS BEING RUN IN PURE VAN LINE

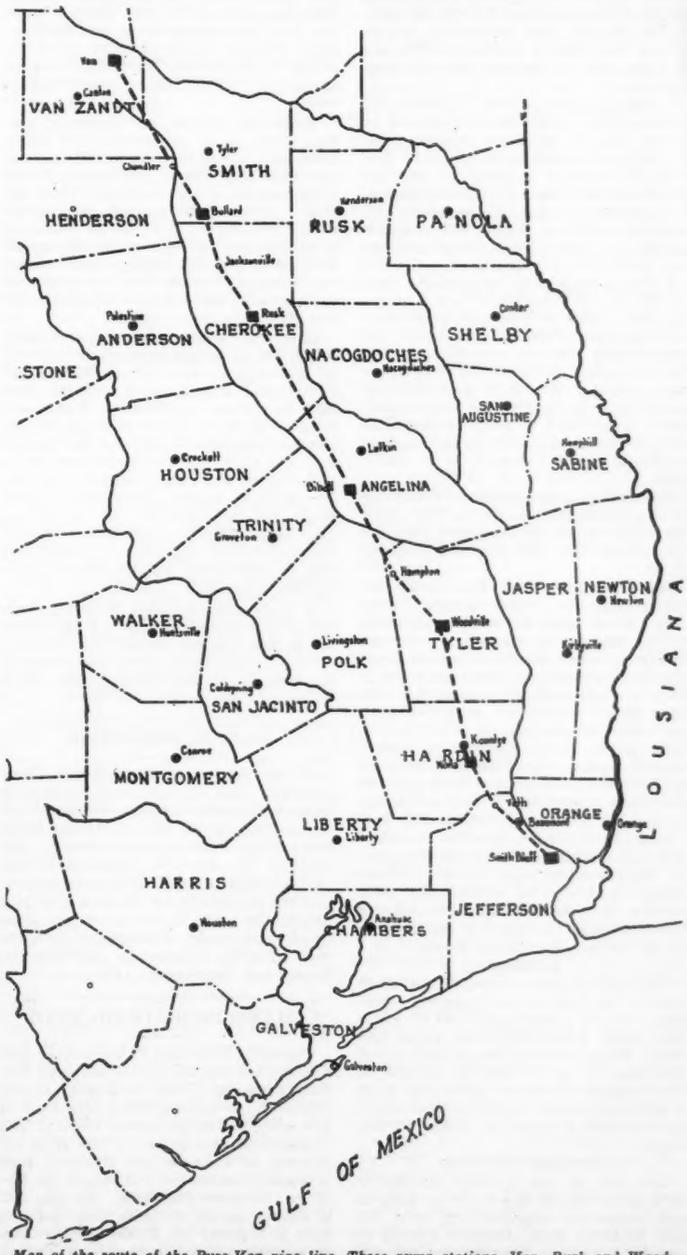
(Continued from Page 56)

new line in reality begins at Chandler although it has been tied directly into the old line, and both now are one line. Until completion of the new line, the line to Chandler loading racks was the only outlet of any kind from the field. The past week a railroad extension to the field was completed.

Work Started in March

Work on the new line from Chandler to the coast was started during March and has been carried on with little interruption. Two crews worked simultaneously, one laying southward from Chandler and the other moving northward from the coastal terminus. Most of the right of way passes through a heavily timbered section of east Texas but little difficulty was encountered and there were no large river crossings to be made.

The Pure-Van Pipe Line Co., which is maintaining headquarters in Beaumont, Tex., was organized early in the year as a subsidiary of the Pure Oil Co. in the handling of crude production at Van. W. M. Averill is president of the company and has had active supervision over the laying of the line.



Map of the route of the Pure-Van pipe line. Three pump stations, Van, Rusk and Woodville, and other proposed stations are shown.

SKELLY OIL REPORT

Skelly Oil Co. reports for quarter ended June 30, 1930, net profit of $736,274 after interest, federal taxes, depreciation and depletion, equivalent after preferred dividends paid on 6 per cent preferred stock, to 59 cents a share (par $25) on 1,099,659 shares of common stock. This compares with $547,510 or 50 cents a share on 1,095,581 shares in preceding quarter and $2,028,728 or $1.86 a share on 1,089,857 shares in June quarter of 1929.

Net profit for six months ended June 30 amounted to $1,283,784 after above charges, equal after preferred dividends paid to $1.09 a share on 1,099,659 common shares comparing with $3,198,936 or $2.93 a share on 1,089,857 shares in first half of previous year.

WARNER-QUINLAN CONTRACT

The Warner-Quinlan Co., with a refinery at Warners, N. J., has been awarded a contract by the Burns Brothers of New York, calling for the delivery of 2,000,000 gallons of gasoline over the next 12 months. The Greely Bus Co. has also contracted for 400,000 gallons of gasoline for delivery over the next year.

NATURAL GASOLINE PRICES ADVANCED

(Continued from Page 54)

offer high quality products. This contention is not new as it has been heard from time to time over the past five years. It is possible, however, that it is increasing in importance pointing to the day when differences in gasoline quality as manufactured by refiners will be generally recognized with wider price differentials in line with these differences.

Gasoline and Naphtha

Several refiners in Oklahoma and Kansas last week reported gasoline shipments greater than any similar period this year. There are numerous cases in Oklahoma and other Mid-Continent areas in which refiners are in excellent shape in regard to gasoline. The demand has been in line with what they expected early in the year and they have been able to reduce inventories without forcing material on the spot market.

This situation, if it was general, would quickly be reflected in a stronger market. But on the whole it continues to be a buyers' market and prices have not improved. Some of the buyers apparently believe that the situation is such that the sellers will welcome most any kind of a proposition. Inquiries are coming into the Oklahoma market from all parts of the country, the prospective buyers hunting for bargain material. This applies not only to gasoline but all other products.

A case in point is cited in which an eastern jobber is said to have wanted to contract for U. S. Motor gasoline over 90 days at a maximum price of 5½ cents, the buyer to be protected provided quotations went lower during that period. This proposition and others reflect an unsettled condition which will continue so long as sellers dump excess gasoline with little regard to price.

A few in touch with the gasoline market believe that conditions are improving. They state that certain weak spots have improved. The Chicago group and other Middle Western refiners, however, are still quoting delivered prices in Michigan, Indiana, Wisconsin and Ohio on the principle of "get the business regardless of price," and to compete Oklahoma refiners would be forced to sell around 5 cents a gallon for the U. S. Motor grade.

The general price range in Oklahoma for this grade is from 5¾ to 6½ cents. The price ranges up one-fourth cent for each of the 400, 390 and 375 endpoint grades.

There were at least two export inquiries for the higher gravity gasolines. These inquiries were received by several refiners in all refining groups. So far as known, no large business was placed. One inquiry is said to have come from an independent source and the other from a company affiliated with the export association.

Based on these inquiries, exporters are also looking for cheap material over August with no attention being paid to the prices quoted at coastal points by the Export Petroleum Association, Inc.

Some U. S. Motor gasoline has been sold for domestic delivery over August at the prevailing spot market. These sellers want assured outlets for their gasoline over the next 30 days and are willing to take the losses if the gasoline should advance during the month.

Kerosene

The general price range of the 41-43 water white kerosene is 3¼ to 3¾ cents. Sales of this grade and a 40-41 grade were made under this price range last week. The market is weak and sellers who have to move material outside of their regular customers generally have to give concessions in price. The higher gravities are available at a low of 3½ cents.

Fuel and Distillates

The fuel oil and distillate market is more active in the Middle West both in spot shipments and delivery over the next 30 to 60 days. Refiners located in the Mid-Continent, however, are not getting much of this business. Refiners in the Middle West are quoting the prices necessary to get the orders.

In heavy fuels the spot demand in Oklahoma is usually for short hauls. There is a wider demand for the higher gravities and low cold test fuel oils, gas oils and distillates but price ranges are unchanged.

Lubricants and Wax

Two large wax manufacturers are not quoting for immediate delivery. There is a better tone to this market and higher prices are expected. Buyers appear willing to pay present prices especially when it includes shipments over the next 30 to 90 days. There have been several inquiries for delivery over the remainder of the year.

Although nominal prices are unchanged, the lubricating oil market is generally unsettled. Prices on finished motor oils have been greatly reduced in some cases making it possible for the price cutters in the retail end to offer oils as low as 15 cents a quart.

NEW MEMBERS PROBABLE IN GASOLINE PIPE LINE

The Skelly Oil Co. and the Mid-Continent Petroleum Corp. will probably become interested directly in the ownership and management of the Great Lakes Pipe Line Co. which will build a gasoline pipe line system from the Mid-Continent Field to the Great Lakes and other points in the Middle West, according to information which became available this week.

While no official announcement has been made it is understood that plans have been completed which will connect the Eldorado, Kans., refinery of the Skelly company and the West Tulsa refinery of the Mid-Continent corporation to the pipe line system which starts at the Okmulgee refinery of the Barnsdall Refineries, Inc. The Skelly plant refines approximately 14,000 bbls. of crude oil daily and the Mid-Continent refinery 25,000 bbls. daily.

Both the Skelly and Mid-Continent companies have bulk and service stations in the territory west of the Mississippi River which will be served with the lines with extensions to Chicago. The Great Lakes Pipe Line Co. was organized by the Continental Oil Co. and the Barnsdall Oil Corp. Plans have been completed to start actual construction of the line early in August. How much of the stock will be purchased by the Skelly and Mid-Continent corporation is not known but both concerns, it is expected, will be represented on the board of directors.

It is also reported that the Deep Rock Oil Refining Co. and the Independent Oil & Gas Co. are considering the purchase of stock in the pipe line company to provide transportation from their Oklahoma and Kansas refineries.

W. G. BURTON DEAD

W. G. Burton of Fort Worth, Tex., merchant and oil man well known in many southwestern cities, died suddenly in his room in the Skirvin Hotel, Oklahoma City, from a heart attack. Mr. Burton's oil interests, beginning in the Gulf Coast area of Texas, had occupied his time exclusively for the past 15 years. Among the areas in which he was identified with early development projects were North Louisiana, Burkburnett, Texas, and Smackover, Arkansas.

CHAMPLIN BUILDING LINE

Champlin Refining Co. has started digging ditches for its new 8-inch pipe line from Township 18-4w, in Logan County, Oklahoma, to the Oklahoma City Pool in Township 12-3w, Oklahoma County. The Champlin company has a line from its refinery in Enid to the Marshall Pool in Logan County and will extend the line to the Oklahoma City area. The line will be approximately 60 miles long and will have a capacity of 20,000 bbls. a day. It is expected to be completed and in operation by November 1.

To Pipe Natural Gas From Mid-Continent To Atlantic Coast

By B. E. V. Luty

PITTSBURGH, Pa., July 28.—In many quarters there is reported a better sentiment in trade generally and a better "tone" in the steel market. Steel has practically followed a more or less usual seasonal course since the first of this year. It was off a certain amount from other years and stayed just about the same amount off into June, when production had more than usual seasonal drop, whereby the ratio between July production and average production during the first half of the year is somewhat lower than has been the case in ordinary years which merely had seasonal swing, with no long range up or down swing. Trade is not as dull as "the market" would indicate, for the rate of steel production is estimated at slightly over 55 per cent of capacity, and this means a daily tonnage only 30 per cent under the average rate during 1928, which was a record year in its time. It is really remarkable that so much steel should be produced, shipped and consumed when all the talk is that everything is very dull.

Finished steel prices appear to be holding moderately well. There are few large and tempting orders. Furthermore, there are occasional declines. Last week long ternes slipped $1 to $2 a ton, being now quotable at 3.55 to 3.65 cents, while the former shading in galvanized sheets spread to such an extent that the market became quotable at 3.10 to 3.20 cents against flat 3.20 cents previously quoted. Merchant bars, formerly quotable at 1.65 to 1.75 cents, became quotable at 1.65 to 1.70 cents, or at exactly the same range as plates and shapes. It is doubtful whether 1.65 cents is really the minimum on a good-sized order. No question whatever is raised about the stability of pipe prices.

No important line pipe buying has been reported for several weeks, but it has been definitely stated that many projects are being considered and are likely to result in orders in due time, long before the mills run out of their present orders.

One particularly large project is rumored, to pipe natural gas from the Mid-Continent to the Atlantic seaboard, and it is said this would make the largest line pipe order yet, perhaps 300,000 tons, passing the Texas to Chicago line, for which about 200,000 tons was ordered within the past few months.

All capacity to make 10-inch and larger line pipe is fully engaged and booked ahead, while there is some business against two electric welding departments about to be completed.

Standard or merchant pipe has been in relatively poor demand all this year, but it is probably doing as well now as a month or two ago. With capacity for making 10-inch and larger fully engaged, butt-weld capacity, making the small sizes, is probably not 50 per cent engaged.

MONTANA OIL AND GAS FIELDS

The Geological Survey has classified more than 200,000 acres of land in Montana as within the known geologic structure of producing oil and gas fields under the leasing law.

RAILROADS MAY CUT RATES TO OIL SHOW

Three interesting announcements were made this week in connection with the International Petroleum Exposition and Congress to be held in Tulsa October 4-11. W. A. Schlueter, president of the Refinery Supply Co., has been named chairman of the scientific and technical committee of the oil show. Mr. Schlueter, with Alf G. Heggem, president of the Oil Well Improvements Co., has been actively connected with this committee since the first oil show in 1923 and is a director of the exposition.

Arrangements are expected to be completed in a few weeks for passenger transportation to and from the exposition at reduced rates. Representatives of the leading railroad systems in the United States, Canada and Mexico met with the exposition officials last week. More than 350 men attended this meeting.

Oklahoma City, through its Chamber of Commerce, will send over the largest delegation in the history of the exposition. In the midst of a phenomenal oil field, the capital city has placed itself on record as a staunch supporter of the "World's Fair of the Oil Industry," according to Ed Overholser, executive president of the chamber.

A number of 1930 exhibitors are making special efforts to boost attendance by sending information about the oil show over the radio. The Skelly Oil Co. and the Barnsdall Oil Co. are giving "time" over the National and the Columbia national chains. Two Louisiana radio stations will broadcast this information through the courtesy of the Arkansas-Louisiana Pipe Line Co. Stations WKY, Oklahoma City, and KVOO, Tulsa, are also on this list. Other stations which are expected to repeat their favors of the two past years are WOAI, San Antonio, and WFAA, Dallas.

DEATH OF H. L. WOOD

H. L. Wood, veteran oil writer, died in Tulsa Saturday, July 26, after a year's illness. The furneral was held Tuesday, July 29, and burial was in Oaklawn cemetery in Tulsa. He was 79 years old.

Mr. Wood was in Beaumont when oil was discovered on Spindle Top in 1901. He had been a newspaper man and printer and became interested in oil from a news angle. For years he covered the Coastal fields for various newspapers and then entered the employ of the Oil City Derrick as correspondent for the Mid-Continent fields. When The Oil and Gas Journal was established in 1910 by P. C. Boyle, owner of the Oil City Derrick, Mr. Wood was made president and editor. He remained with the Journal about two years and thereafter was employed by National Petroleum News, Oil Trade Journal, Fuel Oil Journal and Oil Age, and the Tulsa Tribute and other daily newspapers. His last employment was with a Shawnee, Okla., newspaper.

MAKE FERTILIZER FROM GAS

The Royal Dutch-Shell group has decided to build a plant in California to manufacture fertilizers and other chemical products from natural gas, according to the annual report of the Shell Trading & Transport Co.

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of June		6 mos. ending June	
Petroleum—	1929	1930	1929	1930
Crude ..... Bbls.	2,610,078	2,507,373	11,515,972	12,092,165
Crude ..... $	3,784,279	3,767,538	15,446,512	16,497,315
Total refined petroleum ..... Bbls.	11,432,151	13,232,241	60,974,209	65,472,475
Total refined petroleum ..... $	45,353,120	45,559,072	242,750,620	241,456,072
Gasoline, naphtha, and other light products ..... Bbls.	5,698,711	6,962,595	28,303,730	33,511,349
Gasoline, naphtha, and other light products ..... $	25,021,994	26,984,540	128,023,228	138,484,433
Oils, illuminating ..... Bbls.	1,725,552	1,782,025	10,188,978	8,991,976
Oils, illuminating ..... $	7,651,974	6,434,599	43,549,526	35,035,306
Gas and fuel ..... Bbls.	3,027,772	3,502,620	16,921,402	17,636,562
Gas and fuel ..... $	2,961,313	3,490,594	17,783,471	17,722,223
Lubricating ..... Bbls.	959,983	971,570	5,459,501	5,248,886
Lubricating ..... $	9,427,067	8,430,591	52,002,041	48,998,473
Other refined petroleum ..... Bbls.	20,133	13,431	100,598	83,726
Other refined petroleum ..... $	290,772	218,748	1,392,354	1,215,631
Paraffin wax ..... Lbs.	24,983,933	23,014,700	142,516,580	135,770,642
Paraffin wax ..... $	1,103,602	811,516	7,001,492	5,245,627

Western Canada's Signs of Progress

Better Showing in First Half of Year Than in Same Period Last Year in Oil and Gas. Extensive Wildcatting

By Victor Lauriston
Staff Correspondent, Canadian Fields

Available government figures of Canadian petroleum production in 1930 cover only the four months to the end of April. Production in this period for all Canada was as follows compared with the same period in 1929:

	1929	1930
January	54,874	100,496
February	53,025	89,961
March	69,691	119,350
April	83,542	102,335
Total	261,132	412,142

Of the April total, 90 per cent came from Alberta, which produced 83,052 bbls. of crude naphtha, 8,390 bbls. of light crude and 962 bbls. of heavy crude. The crude naphtha and the bulk of the light crude oil was from the Turner Valley Field, with part of the light crude from Red Coulee and the heavy from the Wainwright and Ribstone Fields.

In the same period, natural gas production for 1930 aggregated 12,516,885,000 feet compared to 11,950,937,000 feet in 1929. The increase was due entirely to increased production in Alberta, Ontario and New Brunswick showing little change.

Turner Valley Deliveries

The bulk of the crude production comes from the Turner Valley Field. Turner Valley deliveries for the first six months of 1929 and 1930 are as follows:

	1929	1930
January	38,501	88,975
February	41,349	78,319
March	56,701	105,835
April	69,207	87,378
May	88,302	84,046
June	92,122	*102,000
Total	386,182	546,553

*Estimate.

The figures for June, 1930, are estimated; the totals show for the six months an increase of 160,371 bbls. over the same period in 1929.

Eastern Canada

In eastern Canada drilling operations have been pretty well restricted to the further testing of proven fields by the large gas companies.

In New Brunswick, New Brunswick Gas & Oilfields, Ltd. is this year carrying on a normal amount of drilling in the Stoney Creek gas field. Some new wells will be put down and old wells cleaned and deepened in order to maintain the company's gas reserves.

Earlier in the year important wildcatting was forecast for the province of Quebec, in the Lanoraie area north of the St. Lawrence, between Quebec and Montreal. There has been extensive leasing both north and south of the river, but so far no actual drilling has been reported.

Ontario Operations

In Ontario, two new potential gas fields have attracted attention. In Mosa Township, Middlesex County, a wildcat test by Southern Ontario Gas Co. near Newbury got a production of 1,000,000 feet from the Clinton; a second test finished dry and a third is being drilled.

In Kent County, the new D'Clute Field, opened last year by the Union Natural Gas Co., looks like an important easterly extension of the old Tilbury Field. Union Natural Gas Co. has carried on additional drilling about a mile north of Lake Erie, getting one productive well, good for around 700,000 feet, and two dry holes. Two additional wells are drilling, in addition to systematic tests for structure. Close to the lake shore, American Engineering Co.'s No. 1 got a shot production of 1,800,000 feet, settling to about 700,000 feet. No. 2, a little west, did decidedly better, with a shot production of 5,500,000 feet or more and traces of oil. Practically all available territory is leased.

No new work has been done in the old Tilbury Field. In Dover Township, Acme Gas & Oil Co. and Olga Oil & Gas Co. have both finished tests of the Trenton limestone, the former dry and the latter with a small production; and no new work is forecasted. In the Bothwell Field, Kent County, Olga Oil & Gas Co.'s Trenton test finished dry. South of the Bothwell Field, several shallow wells got a small pumping production of crude oil earlier in the year.

In Lambton County, Union Natural Gas Co. has drilled several tests of the Dawn sand in Dawn Township, without success. Further west, a deep test by Sarnia Oil & Gas Co. in Moore Township, went through the Trenton without getting production. In Colchester Township, Essex County, Acme Gas & Oil Co. also tested the Trenton formation and got a dry hole.

In Norfolk County, a test drilled jointly by Acme Gas & Oil Co. and Vacuum Gas & Oil Co. at Mabee's Corners got a gasser, good for 400,000 feet a day at 1,350 feet depth; and further development is likely.

The Six Nations Indian Reserve in Brant County has developed a fair gas field, small gassers being got at around 500 feet depth. Petrol Oil & Gas Co. has drilled some 18 producers of this type, and Acme Gas & Oil Co. got 117,000 feet a day in the first of a series of 10 tests. A shallow test drilled near Port Bruce in Elgin County got a pocket of oil, but failed to hold up.

No important new wildcatting operations are forecast for 1930, financial conditions exercising a depressing effect on this form of activity.

Red Coulee Field

In Alberta, the new International Red Coulee Field, west of Coutts, is the outstanding feature of recent operations. The field was opened last fall by Vanalta Oils' No. 1, on the Alberta end of the structure, the same company also drilling the second producer. Since then, however, the major part of the development and the largest producing wells have been on the Montana side. The Field is apparently an extension or an outlying fold of the Kevin-Sunburst, and the crude is around 34 gravity. Two pipe lines are at present taking production from the field. Production is secured around 2,490 feet. In most wells gas is met in the Sunburst sand, with oil apparently in two lower horizons. Developments toward the end of June indicated a probable important extension of the field to the north. Completions are as follows:

	S-T-R	Bbls.
Alberta		
Vanalta Oils' No. 2	4- 1-16w4	60
Commonwealth Pet.'s No. 1	3- 1-16w4	dry
Southern Alta. Exp.'s No. 1	3- 1-16w4	200
Alberta Pacific's No. 1	4- 1-16w4	110
Montana		
Mid-Continent's No. 1	2-37- 4w	100
Monalta Oil Co.'s No. 2	1-37- 4w	100
Cosmos Pet.'s No. 1	2-37- 4w	350
Mid-Continent's No. 2	2-27- 4w	100
Rice & Radigan's No. 1	1-37- 4w	300
Hannah-Porter Oil's No. 1	2-37- 4w	400
Huso Bros.' No. 1	1-37- 4w	dry

Some seven other tests are drilling on the Montana side and 10 more or less active on the Alberta end of the structure, with about a dozen locations on which actual drilling has not yet started.

Western Canada

No drilling activity has been reported in Manitoba, and in Saskatchewan drilling operations are limited to rather slow progress on a few unfinished tests.

In British Columbia two tests are active in the Flathead Valley on Sage Creek, one is starting on Akamina Creek, and one or two in the foothills area in the southeastern portion of the province. The Sage Creek tests report good shows of light crude, but no conclusive results have yet been obtained.

In the Northwest Territories, mining interests have taken north a light drilling outfit to test structure, in the hope of developing a shallow production of crude oil that can be used for fuel in smelting copper ores. This is the first activity in the Far North since the Fort Norman operations of Imperial Oil, Ltd. were abandoned.

New Tests in South

About half a dozen new tests have been started by Imperial Oil, Ltd., chiefly in the South Turner Valley. In the central field, three or four new tests are being started. At the end of June the situation was as follows:

	Producing	Drilling	Inactive	Locations
South	16	19	15	6
Central	26	17	8	2
North	4	1	7	..
Total	46	37	30	8

Some of the wells listed were finishing at the end of June with potential production as indicated, and one, Homestead's No. 1, was taking production while deepening in the lime. It is difficult to estimate production in this field. In the upper horizons, light crude producers start with a flush production which declines rapidly. In the deep lime, on the other hand, freezing usually follows the bringing in of a new producer, and may interfere with production at any time. Quite often a well does not reach its peak for some time after it first comes in. A well may produce at its peak one month, the next month may decline almost to zero, and still later may return to its original yield.

Turner Valley Field

The Turner Valley Field southwest of Calgary continues to provide the larger portion of the Canadian production. The first half of 1930 had one spectacular completion, Calmont Oils' No. 2, in South Turner Valley. This well, though only now in fairly steady production, has tested intermittently as high as 1,200 bbls. a day, and is reported likely to average 700 to 800 bbls., making it the largest producer yet drilled in the entire field.

Several good producers have been completed, and a number of smaller wells. Most of the new production is in the South Turner Valley. The most encouraging feature in this area has been the result from the two Mercury wells in Section 4-19-2w5, materially extending the potential productive area of the south field.

Another feature of recent development work has been the success resulting from the shooting of wells in the deep lime. Several tests carried to considerable depth into the lime with small shows of wet gas were made commercially productive in that way; with the result that the practice of shooting seems likely to be adopted wherever the lime naturally fails to yield a satisfactory production.

Central Turner Valley has developed several additional producers. In North Turner Valley there has been one successful completion, Model Oils' No. 1; with, on the other hand, two wells abandoned, Dome Oils' No. 1 and Invader Oils' No. 1. Abandonment in both cases was due to faulted conditions which placed the lime horizon beyond the reach of the drill. Recent drilling in this end of the field has considerably limited the potential producing area; and at the end of June a large number of tests were inactive. On the other hand, two producers in this end of the field, Foothills' No. 1 and Model's No. 1, are among the steadiest and most consistent producers in the entire Turner Valley Field.

East Central Alberta

In east central Alberta, three areas are active. In the Viking Field, Northwest Utilities, Ltd., of Edmonton, is this season drilling three tests for gas, of which one has been completed with a good production.

Further east, the Wainwright Field has shown relatively little activity. Peninsular Petroleums, Ltd., of Toronto, has taken over the Wainwell Oils properties, and will put the wells in shape for steady production, in addition to doing some new drilling.

At the end of June, two new producers were being brought in, Onalta Oils' No. 1 and Wainwright Petroleums' No. 1. Several other tests were drilling close to production. The field has about half a dozen wells with a small production, 25 to 100 bbls., of heavy crude. Most of this is handled by a small plant in the field, owned by Associated Refineries, Ltd.

Further east, the Ribstone Field has new producers, Imperial Oils' Ribstone No. 2, possibly good for 200 bbls. and Meridian Oils' No. 2, with a potential 100 bbls. or better.

Wildcat Tests

Outside these proven areas, some interesting wildcat tests are in progress in various parts of Alberta. Alberta Pacific Consolidated Oils, Ltd., has one test drilling on the Duvernay structure north of Edmonton and another on the Spring Coulee structure near Lethbridge. Hudson's Bay Oil & Gas Co. is drilling four widely scattered tests—one on the Highwood structure, one in the Lomond area, and two (rigging up) in the Castor and Keho Lake areas. Imperial Oils, Ltd. and the Texas Oil Co. are reported arranging to test a new field near Lethbridge.

In the foothill belt, a number of tests started last year are shut down owing to financial conditions, and the limited drilling carried on this spring has so far failed to develop commercial production at any point. Four interesting areas still show activity. On the Waite Valley structure, west of Turner Valley, four tests are actually drilling and three shut down. Further south, the Highwood structure has four active tests, of which three have penetrated the limestone at comparatively shallow depth and two have got shows of light crude in that horizon. On the Moose Mountain structure northwest of Calgary, the Signal Hill Oil Co.'s No. 2 got a good light crude show in the upper horizons and is drilling close to the lime; while in the extreme south, Weymarn Petroleum's No. 2 at Pincher Creek is providing a shallow drilling proposition, with a good show of wet gas and seems close to the lime.

In the border areas, two tests are drilling on the Milk River structure, one in the Devonian; Range Oil & Gas Co. is drilling for gas on the prolific Rogers-Imperial structure; and Eagle Butte Oil Co. is putting down a second test in the Cypress Hills. In the Skiff Field, Dauntless Oils' No. 1 was abandoned early in the year; and Devenish Petroleums' No. 1 is now drilling.

Actual crude oil production has been reported from Fuego Oils' No. 1 in the Acadia Valley near Oyen; but the well has not yet been placed in steady production.

GULF OIL CO. ABANDONS PANAMA SEARCH FOR OIL

PANAMA CITY, Panama, July 28.—After many years of fruitless exploration on the isthmus, the Gulf Oil Co. has decided to abandon the isthmian field and has formally asked for a cancellation of the concession to search for oil.

The actual exploration work in the Province of Darien was suspended by the Gulf Oil Co. several months ago, but the concession granted in 1923 was retained and the company regularly paid an annual fee of $2,500.

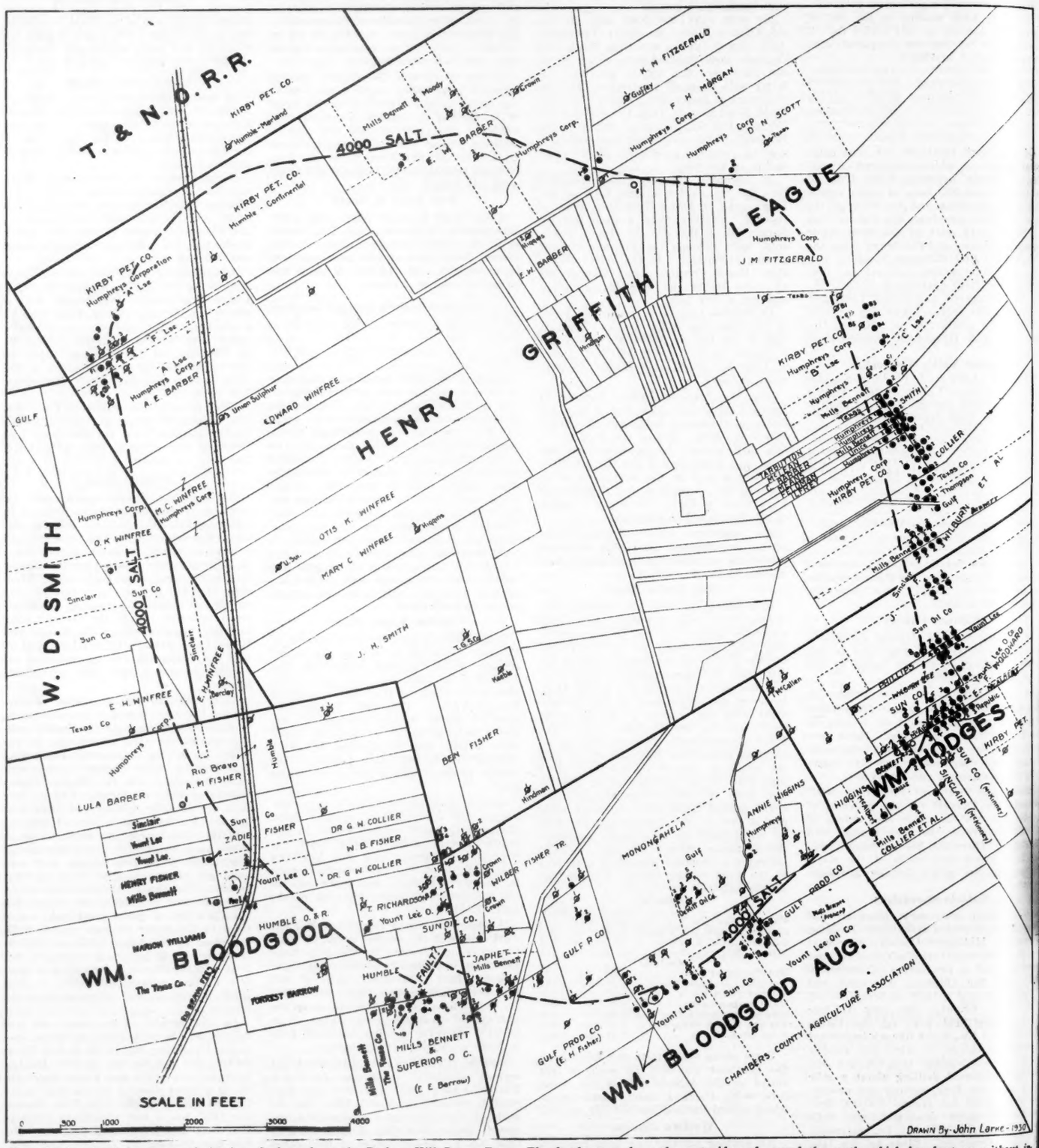
The only other oil concern retaining concessions rights for exploration within the republic is the Sinclair Oil Co., which, however, has also been slowing down its activities gradually.

It is estimated that the Sinclair and Gulf Oil companies have already spent about $1,000,000 in a fruitless hunt for oil in Panama.

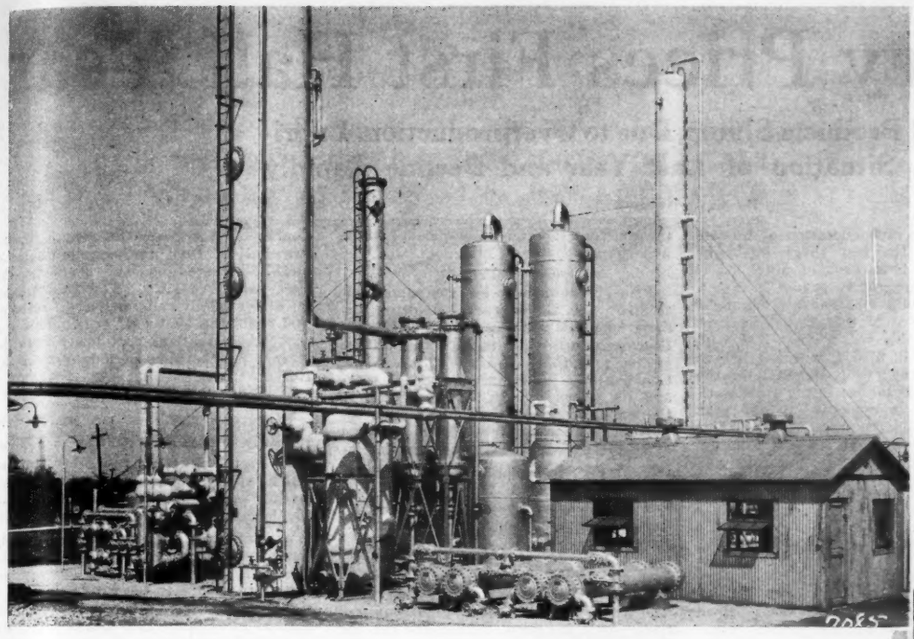
P.G.&E. OFFERS BONDS

National City Co., Blyth & Co., Inc., American Securities Co., H. M. Byllesby & Co., Inc., E. H. Rollins & Sons and Peirce, Fair & Co. are offering at 96½ to yield 4.72 per cent $25,000,000 Pacific Gas & Electric Co. first and refunding mortgage 4½ per cent bonds, series "F," due 1960. Proceeds will be used to finance the company's large construction program and to retire other bond issues bearing higher interest rates than this issue, with resultant saving in fixed charges.

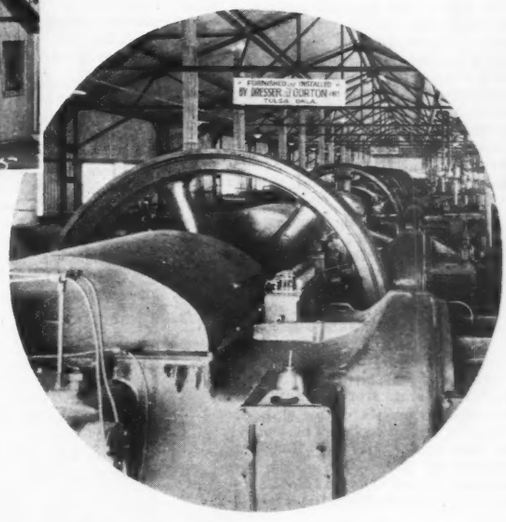
DEVELOPMENT AROUND BARBERS HILL DOME IN TEXAS



Map showing development around the deep flank sands at the Barbers Hill Dome, Texas. The development down the east side and around the south, which has kept up without interruption since October, 1928, following the bringing in by Mills Bennett Production Co.'s No. 1 Smith flowing 4,000 bbls. daily at 5,272 feet, has resulted in proving an almost continuous line of production around those sides. Three new pools have been opened this year, which may be links in the establishing of a complete circle of production around the dome. The three new pools are shown on the map as follows: The northwest flank, opened January 3, by Humphreys Corp.'s No. 8-A Kirby flowing 3,900 bbls. at 6,416 feet; the southwest flank, opened by Yount Lee Oil Co.'s No. 1 Zadie Fisher, flowing 3,100 bbls. at 6,661 feet; and the extreme north flank, opened by Humphreys Corp.'s No. 1 Morgan, flowing 200 bbls. at 6,404 feet. Outside of the northwest flank pool, only one producer has been completed in each. In that pool, a second deep well, No. 1-F Barber, has been added. The other completions shown on the map are from shallow sands.



TURNKEY CONSTRUCTION *Engineered by* DRESSER AND GORTON



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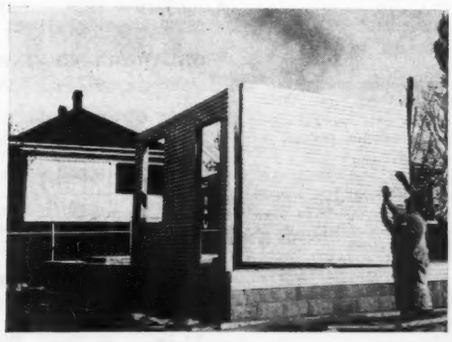

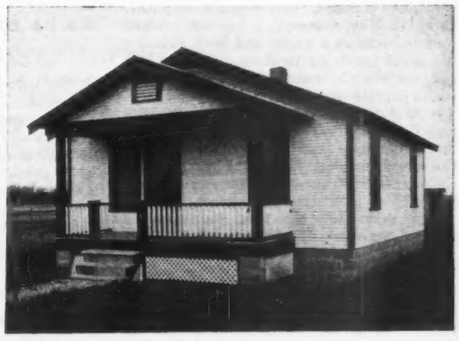

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Low Refinery Prices First Half Year

Practically All Products Slump, Due to Overproduction. Lubricants Reverse Situation of Last Year and Decline Rapidly

By C. O. Willson

The first half of 1930 brought the lowest average prices on many refined products in any similar period of the past several years.

Constructive efforts to bring about better market conditions following declines extending over the last half of 1929 in most cases fell short of the goals and the half year ended with the principal products—gasoline, fuel oil and kerosene—exceptionally low priced for domestic movement in most refining areas with no indications of immediate improvement.

So far as the first six months of 1930 are concerned in the refinery market, it was a continuance of price movements which started the previous year. The year 1929 was outstanding as a period of overproduction in both crude oil and refined products. Before the year ended crude oil output was curtailed in line with the demand and this program continued the first half of this year with general success reflected in crude oil stock reductions.

In the refining end, some attempt was made to curtail plant operations with indifferent success. It was realized that all refinery products, particularly gasoline, were being overproduced, reflected in the fact that gasoline stocks at refineries at the start of 1930 were 10,000,000 bbls. greater than on the same date of the previous year. Fuel oil and gas oil stocks which had been steadily accumulating in several refining groups since 1927 were also topheavy. A favorable statistical situation in regard to kerosene and lubricating oils at the start of 1929 was also changed the latter part of the year and domestic prices had started to decline and this trend continued this year.

Gasoline

The price decline in gasoline as shown in the accompanying table continued the first three months of 1930. Quotations during this period were at the low points since gasoline became the principal product obtained from crude oil.

A rally got under way late in March and extended through April. It was thought for a time that a satisfactory market would be obtained which would continue through the summer months. Early in May, however, it became evident that refiners as a group had been running too much crude oil to their stills and had not sufficiently reduced excessive inventories carried over from the previous year. The fact that gasoline shipments in May and June did not continue to show the large increases over the same months of the previous year were also a factor in the market weakness. Shipments of gasoline from refineries for export and domestic movement the first four months showed an unusual increase of 12.6 per cent when compared with the same period last year. Exports for this period increased 23.3 per cent.

Open market quotations on gasoline started to decline early in May and by the middle of June had reached the low levels prevailing in January and February. Before the half year ended a number of large and small refiners had started curtailing their plant operations, but no improvement in gasoline prices was apparent. In fact, in a few areas where prices had not been reduced materially it was expected that a lowering of quotations would continue in July.

Mid-Continent Prices

Representative of the spot market in the Mid-Continent the U. S. Motor Gasoline in North Texas brought an average low of 6.27 cents the first half of this year. This compares with averages of 7.3 cents and 6.51 cents for the same periods in 1929 and 1928. The low of 5⅝ cents for the first half of the year was in effect in February and early March and the high quotation of 7 cents was effective the last three weeks of April and the first week of May.

In the higher gravity grades in North Texas, the 60-62 400 endpoint brought an average price of 6.56 cents the first six months of this year; 64-66, 390, 6.94 cents, and 64-66, 375, 7.26 cents. There was an excellent export demand for the higher gravity gasolines in the Mid-Continent the first four months of the year and a relatively favorable market was maintained during that period. This demand fell off the last two months and prices receded so that the price differentials for the several grades of gasoline were narrowed.

Pennsylvania refiners felt the slump in the gasoline market even more than the Mid-Continent refiners. The average price on U. S. Motor in Pennsylvania for the first six months was 7.8 cents, which compares with 9.41 cents for the same period last year. Pennsylvania refiners for years were accustomed to a price differential of from 2½ to 4 cents a gallon over the Mid-Continent price for the same grade. During the past three years the eastern gasoline market has been made more competitive by the encroachment of California gasoline which has become more a factor in Pennsylvania prices than the Mid-Continent. The relatively high antiknock rating of the California gasolines when compared with the straightrun product from the Pennsylvania plants has accentuated this situation.

At Bayonne, N. J., which is representative of the coastal market extending from the Gulf Coast to Canada, the U. S. Motor grade brought an average price of 8.64 cents the first half of 1930. This compares with an average of 9.2 cents the first half of last year and 10.2 cents the first half of 1928. The coastal market has also felt the competition of cheap gasoline from the western coast. However, the curtailment this year stopped the constant increase in shipments which was characteristic of 1929.

Export Prices

Prices established by companies affiliated with the Export Petroleum Association, Inc., are generally taken as reflecting the foreign market for refined products in this country. This association has now been functioning 1½ years and its prices are followed not only in the coastal areas but were the basis for purchases from interior refiners the first half of the year. All of the major factors in the export markets are members of this association.

The association's posted prices on gasoline were changed only once during the first six months. Early in March the prices at the Coast were reduced one-half cent and these prices continued effective through the remainder of the half year. The export association's prices at the Gulf Coast averaged 8.49 cents for the U. S. Motor grade, 9.16 cents for the 400 endpoint, 9.41 cents for the 390 endpoint and 9.66 cents for the 375 endpoint. These prices are approximately one-third cent less per gallon than the average prices for the first half of 1929.

The export prices with the decline in the domestic prices were relatively high at the close of the first half year. It was predicted that these prices would be lowered again for the last half year unless domestic prices showed a rapid recovery.

In California, refinery gasoline prices were unsettled due to competitive conditions in tank wagon and retail markets in the western states. About the middle of June, a drastic cut was made by the major operators covering both tank wagon and service station prices. This was reflected in refinery prices, especially on shipments to California distributors.

Representative of the prices obtained for U. S. Motor Gasoline on shipments to the East Coast, the average weekly quotation at Los Angeles for the first six months of 1930 was 6.34 cents. In the first half of 1929, the average quotation was 7.18 cents and 6.66 cents for the same period in 1928. The Los Angeles price for California delivery averaged 8.06 cents the first half year. This was about three-quarters cent lower than the average for the same periods in 1929 and 1928.

Natural Gasolines

In natural gasolines, two markets are generally recognized. One is in California and the other is the Mid-Continent which governs prices for the domestic market outside of the West Coast and also largely determines the export market.

In California except for a relatively small quantity of excess material, the market is determined by the refinery gasoline situation. If the latter declines, a similar reduction becomes effective in natural gasolines. This meant reductions in natural prices when the service station prices were cut in California late in June.

In the Mid-Continent area manufacturers endeavored to maintain prices in line with the refinery gasoline trend and until June were fairly successful in their efforts.

Prices, however, were substantially lower than for the same period last year. The average price in Oklahoma for Grade AA for the first half year was 5.71 cents. This compares with 7.16 cents for the same period last year and 5.41 cents for the first half of 1928. Grade BB, which follows Grade AA in trading activity, averaged 5.09 cents the first half year. As shown in the accompanying table there was less fluctuation than usual the first half year. Natural gasoline prices in the Mid-Continent in the past too often advanced or declined quickly due to a shifting demand. For the first half year the high on Grade AA in Oklahoma was 6½ cents and the low 5 cents. This compares with a high of 8 cents in 1929 and a low of 5½ cents. In 1928, the

AVERAGE PRICES CRUDE OIL AND REFINED PRODUCTS

OKLAHOMA—CRUDE OIL

	6 mos. 1930	1929	1928	1927	1926	1925	1924	1923
36 A.P.I. gravity, per bbl.*	$1.30	$1.37	$1.31	$1.38	$2.13	$1.87	$1.63	$1.56

OKLAHOMA—REFINED PRODUCTS

58-60 U. S. Motor gasoline, per gal.	.0688	.0775	.0795	.0667	.1031	.1055	.0896	.0978
Grade A, 72-79.9, 375 e.p., rec. 90%, natural gasoline, per gal.	.0587	.0706	.0744	.0585	.0946	.1202	.0866	.0913
41-43, water white kerosene, per gal.	.0406	.0517	.0517	.0461	.0727	.0445	.0449	.04
24-26 fuel oil, per bbl.	.792	.706	.7694	.9792	1.3072	1.0908	.954	.9511
32-36 gas oil, per gal.	.0245	.0265	.0247	.0299	.0419	.0368	.0291	.0266
200 vis., 3 color, 23-28 cold test neutral oil, per gal.	.111	.0966	.0947	.1032	.1072	.1139	.1308	.1317
124-126 wax, per lb.	.0234	.0321	.0394	.0294	.0471	.0516	.0446	.0254
150-160 D color bright stock	.366	.3368	.2310	....	....	....	....	....

PENNSYLVANIA—CRUDE OIL

	6 mos. 1930	1929	1928	1927	1926	1925	1924	1923
Bradford crude oil in New York Transit Lines, per bbl.	$2.70	$3.69	$2.98	$2.87	$3.51	$3.50	$3.60	$3.33

PENNSYLVANIA—REFINED PRODUCTS

58-60 U. S. Motor gasoline, per gal.	.078	.0905	.0982	.09	.1273	.1348	.1224	.1353
43 prime white kerosene, per gal.	.0546	.0651	.0635	.0646	.0885	.0656	.0671	.0652
30-34 fuel oil, per gal.	.0381	.0441	.0449	.0477	.0591	.053	.0527	.054
Pennsylvania bright stock, per gal.	.366	.4745	.3186	.3326	.3954	.3824	.3655	.3337

CALIFORNIA—CRUDE OIL

	6 mos. 1930	1929	1928	1927	1926	1925	1924	1923
25 A.P.I. gravity, Long Beach, per bbl.*	$1.15	$1.05	$ .96	$1.00	$1.37	$1.35	$1.06	$ .74

CALIFORNIA—REFINED PRODUCTS

58-60 U. S. Motor gasoline, per gal.	.0806	.0849	.0919	.0873	.1134	Average prices on refined products for 1925, 1924 and 1923 on comparable basis not available.
75-85, 375-390 e.p., natural gasoline, per gal.	.0753	.0803	.0726	.093	.1465	
38-40 kerosene, per gal.	.0446	.0569	.0611	.07	.0745	
15-20 fuel oil at tidewater, per bbl.	.65	.6724	.8692	.9221	.9813	

*Based on daily average posted prices.

Note: Average price on refined products are based on low quotations as published weekly in The Oil and Gas Journal.

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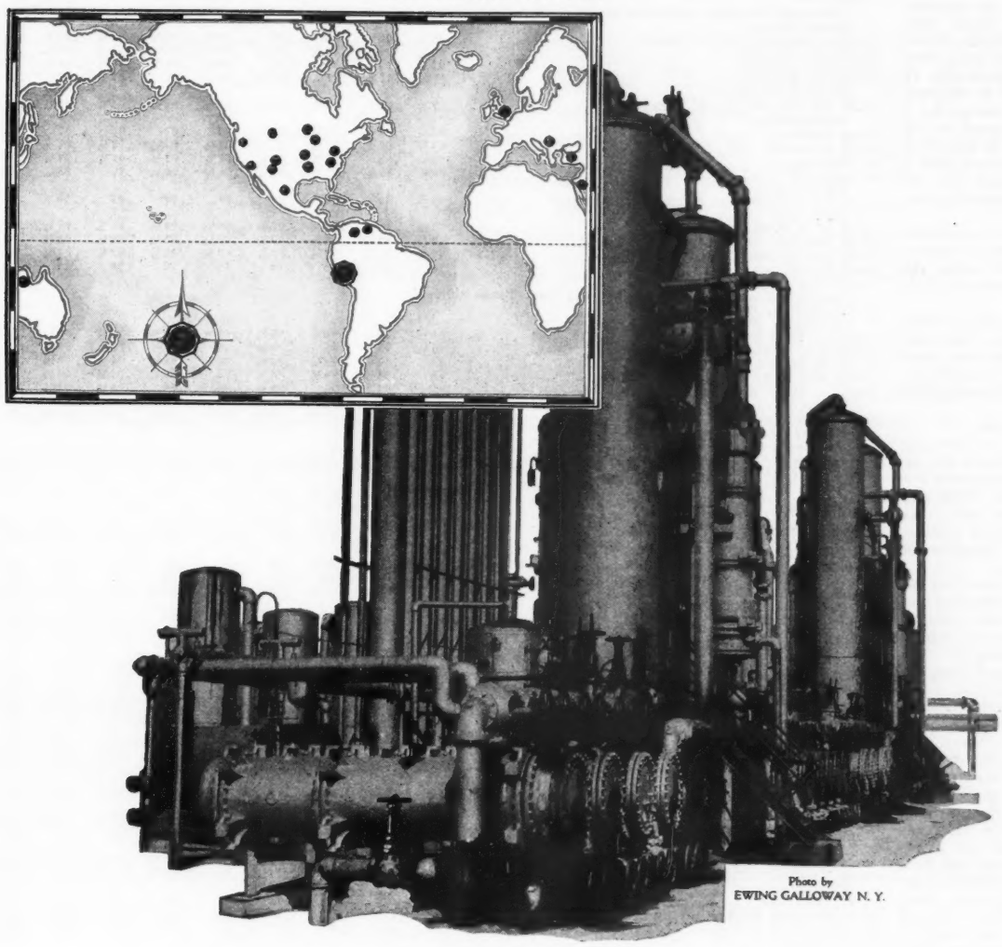

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price fluctuated between a low of 4⅛ cents and a high of 10¾ cents.

Kerosene

After maintaining relatively high prices for a period of three years in relation to crude oil and gasoline quotations, price trends on kerosene the first half year were disappointing. Weakness was apparent before the close of 1929 and the market continued generally soft throughout the first half year.

In some areas where the spot movement is small, refiners were able to maintain prices fairly well, but in the keenly competitive Mid-Continent and Middle Western market prices except for temporary rallies showed a consistent weakness. In Oklahoma the market for the 41-43 grade never advanced over 4 cents except for a short period and in June dropped to 3¾ cents. The decline continued in July with a low of 3¼ cents in Oklahoma and 3 cents in North Texas. These are the lowest prices that have prevailed for several years.

The average price for 41-43 water white kerosene in Oklahoma the first six months of 1930 was 4.06 cents, 5.49 cents the first half of 1929 and 4.6 cents the first half of 1928.

In Pennsylvania the 43 water white grade averaged 5.46 cents the first half of the year. The average Bayonne price was 7.42 cents for domestic movement. For coastwise movement the average California price was 4.07 cents.

Fuel Oil and Gas Oil

As usual, market trends in fuel oils and gas oils were divided between the interior and coastal areas. The market for residuum fuels was weak in 1928 and 1929 and it was predicted by some that with a curtailment in crude oil production that conditions would improve in 1930.

At coastal points, the bunker fuel oil market did show some improvement and prices were advanced 10 cents a barrel. This was due to a restriction in supply and also a fair marine demand. The price advances were maintained over the remainder of the first six months.

In the interior, the industrial consumption declined early in the year, and, starting in the late spring, there was very little demand outside the regular contracts. As a result, the spot market weakened and prices at the end of June had slumped to the low of the previous year. It was conceded that a price advance was largely dependent on a recovery in the industrial demand this fall.

The fuel oil market to a large extent governs the gas oil price situation. Gas oil prices eased off with the lower fuel oil quotations, although there has been a fair to strong demand for grades suitable either for charging stock in cracking operations or the furnace oil grades.

Gravities below 18 which include most of the residual oils from cracking and reducing operations brought an average price of 61.3 cents per barrel in Oklahoma for the first six months. The product started the year at 70 cents and by the latter part of June had declined to 47½ cents. The same grade brought an average price of 49.9 cents the first half of 1929 and 72.02 cents the first half of 1928.

At Bayonne, N. J., Bunker C fuel oil, for which a flat price of $1.05 per barrel was maintained throughout 1929, averaged $1.094 the first half of this year. This was brought about by the 10-cent advance previously mentioned.

Lubricants

Probably the greatest disappointment of the first half year for refiners was the decline in steam refined cylinder stocks and bright stocks. The advance in these products furnished the sensation of the 1929 market and the decline was equally precipitous. Last year the Pennsylvania grade of bright stock advanced from a low of 39 cents early in the year to a high of 57 cents in the early fall.

The heavy demand for quality motor oils of higher viscosity to meet the demand of the new type motors was responsible for the 1929 advance. Western stocks were slower to respond to the upward price and their decline this year has been less rapid.

Prices were lowered rapidly in the Pennsylvania market before the close of

(Continued on Page 225)

THE OIL AND GAS JOURNAL'S TABLE FOR FIRST HALF OF 1930 GIVING LOW WEEKLY AGE PRICES FOR FIRST SIX MONTHS OF 1930 AND THE YEARS 1929

	January				February				March			
GASOLINE AND NAPHTHA—	7	14	21	28	4	11	18	25	4	11	18	25
Oklahoma (Group 3):												
50-52 450 endpoint	.06½	.06½	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼
56-58 450 endpoint	.06¼	.06¼	.06	.06	.06	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.06
58-60 437 endpoint (U. S. Motor)*	.0692	.0692	.0653	.0658	.0655	.065	.0652	.065	.065	.065	.067	.065
60-62 437 endpoint*	.0687	.0663	†.06¼	.0663	†.06¼	.0637	.065	†.06¼	†.06¼	.065	.06¼	†.06½
60-62 400 endpoint*	.0744	.0738	.0696	.0725	.0717	.0675	.0675	.0675	.0675	.0675	.0675	.0673
64-66 375 endpoint*	.08	.0788	.08	.08	†.07¼	.0775	.0775	.0775	.075	†.07¼	.0775	†.07¼
68-70 360 endpoint	.08	.08	.07¾	.07⅞	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07⅝

*Weighted average prices as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

North Texas:												
58-60 437 endpoint (U. S. Motor)	.06¼	.06¼	.06	.06	.05¾	.05¾	.05¾	.05¾	.05⅝	.05⅝	.05⅞	.06¼
60-62 400 endpoint	.06½	.06½	.06¼	.06¼	.06⅛	.06⅛	.06⅛	.06⅛	.06	.06	.06⅛	.06½
64-66 390 endpoint	.07⅜	.07¼	.07	.07	.06¾	.06⅝	.06⅝	.06⅝	.06½	.06½	.06⅝	.06⅝
64-66 375 endpoint	.07⅜	.07⅝	.07¼	.07¼	.07⅛	.07	.07⅛	.07	.07	.07	.07	.07¼
North Louisiana:*												
58-60 437 endpoint (U. S. Motor)	.07	.07	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾
Pennsylvania:												
52-54 Naphtha	.07¼	.07¼	.07¼	.07	.07	.07	.07	.07	.07¼	.07¼	.07¼	.07¼
58-60 Gasoline	.07¾	.07¾	.07½	.07½	.07½	.07½	.07½	.07½	.07¾	.07½	.07½	.07½
60 Gasoline	.08	.08	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.08	.07¾	.07¾	.07¾
64 Gasoline	.08½	.08½	.08¼	.08¼	.08¼	.08¼	.08	.08¼	.08½	.08	.08	.08
California:												
58-60 437 endpoint (U. S. Motor), domestic	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
Gulf Coast (Export):												
58-60 U. S. Motor	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08	.08	.08	.08
60-62 400 endpoint	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09	.09	.09	.09
61-63 390 endpoint	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¼	.09¼	.09¼	.09¼
64-66 375 endpoint	.10	.10	.10	.10	.10	.10	.10	.10	.09½	.09½	.09½	.09½

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE—												
Oklahoma (Group 3):												
Grade A, 72-79.9, 375 e.p., rec. 90%	.05½	.05¼	.05¼	.05⅝	.05⅝	.05½	.05½	.05½	.05½	.05½	.05⅝	.05⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05½	.05	.05	.05¼	.05	.05¼	.05¼	.05⅜	.05⅜	.05⅜	.05½	.05⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.05	.04¼	.04½	.04½	.04¼	.04⅜	.04½	.04⅝	.04½	.04½	.04⅝	.05
Grade BB, 84-92, 375 e.p., rec. 85%	.05	.04⅜	.04½	.04¼	.04	.04¼	.04¼	.04½	.04⅜	.04⅜	.04½	.04⅜
Grade C, 80-92, 375 e.p., rec. 78%	.05	.04	.04	.04⅛	.04	.04	.04⅛	.04⅛	.04⅜	.04⅜	.04½	.04⅝
California:												
75-78 375-390 endpoint	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.07¾	.07¾	.07¾
BURNING OIL—												
Oklahoma (Group 3):												
41-43 water white Kerosene	.04⅛	.04⅛	.04	.04	.04	.04	.04⅛	.04⅛	.04⅛	.04	.04⅛	.04¼
42-44 water white Kerosene	.04⅝	.04⅛	.04⅜	.04⅜	.04¼	.04¼	.04⅜	.04⅜	.04⅜	.04¼	.04⅛	.04⅜
North Texas:												
41-43 water white Kerosene	.04	.04⅛	.03⅞	.04	.04	.04	.04	.04	.04	.03⅞	.04	.04⅛
Pennsylvania:												
43 Kerosene, prime white	.05⅜	.05⅜	.05⅜	.05⅜	.05⅜	.05½	.05½	.05½	.05⅜	.05⅜	.05⅜	.05⅜
45 Kerosene, water white	.06	.06	.06	.06	.06	.05⅝	.05⅝	.05⅝	.06	.06	.05⅞	.05⅞
California:												
38-40 water white Kerosene (high burning test)	.05	.05	.05	.05	.05	.05	.05	.05	.05	.04½	.04½	.04½
Engine Distillate, 43-44 445 endpoint	.07	.07	.07	.07	.07	.07	.07	.07	.07	.06½	.06½	.06½
Engine Distillate, 42-44 480 endpoint	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06	.03	.06
Gulf Coast (Export):												
41-43 prime white	.07	.07	.07	.07	.07	.07	.07	.07	.06	.06	.06	.06
41-43 water white	.08	.08	.08	.08	.08	.08	.08	.08	.07	.07	.07	.07
FUEL OIL—												
Oklahoma (Group 3):												
Below 18 Fuel Oil, per bbl.	.70	.70	.70	.70	.70	.70	.70	.70	.70	.67½	.67½	.67½
24-26 Fuel Oil, per bbl.	.90	.90	.90	.90	.95	.90	.90	.80	.80	.80	.82½	.82½
32-36 Gas Oil (industrial)	.02⅞	.02⅞	.02⅝	.02⅝	.02⅝	.02⅝	.02⅝	.02½	.02½	.02½	.02½	.02½
38-40 Straw Distillate	.03⅝	.03⅝	.03½	.03½	.03⅜	.03⅜	.03⅜	.03½	.03⅛	.03	.03	.03⅛
North Texas:												
Below 20 Fuel Oil, per bbl.	.65	.65	.60	.60	.60	.60	.60	.60	.60	.57½	.57½	.57½
26-36 Gas Oil (straw)	.02⅝	.02⅝	.02⅝	.02⅝	.02⅝	.02½	.02½	.02½	.02⅝	.02⅜	.02⅜	.02⅝
38-40 Straw Distillate	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅛	.03⅛	.03	.02⅞	.03	.03	.03
North Louisiana:*												
18-20 Fuel Oil, per bbl.	.80	.80	.80	.80	.85	.85	.85	.85	.85	.85	.85	.85
Gulf Coast (South Texas):												
Gas Oil	.04	.04	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾
Bunker C Fuel (cargo lots), per bbl.	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65
Pennsylvania:												
30-34 Fuel Oil	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04¾	.04¾	.04¼	.04½
36-40 Fuel Oil	.04⅝	.04⅝	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04½	.04½
California:												
26-32 Distillate	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
15-20 Fuel Oil, Bunker (at tidewater)	.70	.70	.70	.70	.70	.70	.70	.70	.70	.70	.70	.70
27 plus Diesel, per bbl.	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX—												
Oklahoma (Group 3):												
100 vis., 3 color, 20-25 cold test	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05½	.05½	.05½
180 vis., 3 color, 23-28 cold test	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾
180 vis., 5 color, 23-28 cold test	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
200 vis., 3 color, 23-28 cold test	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.11½	.11	.11
240 vis., 5 color, 25-30 cold test	.12¾	.12¾	.09¾	.12¾	.12¾	.12¾	.12¾	.12¾	.12¾	.12¾	.12¾	.12¾
Cylinder Stocks:												
600, steam refined, light green	.10	.10	.10	.10	.10	.10	.10	.10	.10	.09	.09	.09
150-160 vis., D color, Bright Stock	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
Waxes:												
124-126 White Crude Scale Wax	.02¾	.02½	.02½	.02½	.02½	.02½	.02½	.02½	.02½	.02½	.02½	.02½

All Bright Stock prices are for domestic movement.

Pennsylvania:												
200, 3 color	.24	.24	.24½	.24½	.24½	.24½	.25	.25	.25½	.25½	.25	.25
600, steam refined	.23½	.23½	.22½	.22½	.22½	.22½	.22½	.22½	.24	.24	.24	.24
600, Pennsylvania flash	.30¾	.29¾	.29½	.29½	.30½	.30½	.29½	.30½	.31	.32	.32	.32
Pennsylvania Bright Stocks	.43	.42	.41	.41	.41	.42	.41½	.40	.40	.40	.40	.40
Gulf Coast (South Texas):												
200 vis., 3 color, pale oil	.08½	.08½	.08½	.08½	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼
200 vis., 5-6 color, red oil	.07	.07	.07	.07	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½
California:												
300 vis., 2½-3 color	.11½	.11½	.11½	.11½	.11½	.11½	.10¼	.11½	.11½	.11½	.11½	.11½
Red Neutral:												
200 vis., 4½-5 color	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11

Note—Bright Stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES—												
Gasoline, U. S. Motor, 58-60, 437 e.p.	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.08½	.08½	.08¼	.08¼	.08¼	.08½
Kerosene, water white, 41-43	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜
Fuel Oil, Bunker "C," 14-16°	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Gas Oil, 32-36 gravity	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾
28 pale Paraffin Oil, tank car	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼
150 red Paraffin Oil, tank car	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½
Refined Wax:												
120-122 a.m.p., per lb.	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03⅝	.03⅝	.03⅝	.03⅝
Petrolatum in bbls., in carload lots, per lb.:												
Amber	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝

*Lighterage, 5 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES—												
Kerosene, water white	.09	.09	.09	.09	.07¾	.09	.09	.09	.09	.09	.09	.09
600, steam refined Cylinder Stocks, in bbls.	.31	.31	.31	.31	.30	.30	.30	.30	.30	.30	.31	.31
600, Pennsylvania flash	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.39	.39
Light 140-150 Bright Stocks	.52	.50	.50	.50	.49½	.49½	.49½	.49½	.49½	.48½	.48	.48
LOS ANGELES EXPORT PRICES—												
Kerosene, water white	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04	.04	.04
U. S. Motor Gasoline, 53-55, 437 e.p.*	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼

*Prices on coastwise shipments.

QUOTATIONS ON REPRESENTATIVE REFINED PRODUCTS FOR EXPORT AND DOMESTIC MOVEMENT. INCLUDES AVERAGES 1928. PRICES GIVEN IN CENTS PER GALLON UNLESS OTHERWISE NOTED.

April					May				June				First 6 mos. 1930			1929				1928			
1	8	15	22	29	6	13	20	27	3	10	17	24	Av. price	High	Low	Av. pr. for yr.	High	Low	Av. price 1st 6 mos.	Av. price 2d 6 mos.	Av. pr. for yr.	High	Low	Av. price 1st 6 mos.	Av. price 2d 6 mos.
.06¼	.06¼	.07	.07	.07	.07	.06¾	.06¾	.06¾	.06¾	.06½	.06¼	.06¼	.0648	.07	.06¼	.0721	.08¾	.06½	.0725	.0718	.0738	.09¼	.05½	.0618	.0858
.06	.06¼	.07	.07	.07	.07	.06¾	.06¾	.06¼	.06½	.06¼	.06¼	.06¼	.0626	.07	.06¾	.0711	.08¾	.06¼	.0726	.0698	.0974	.09¼	.05⅛	.0622	.0859
.06625	.0675	.0679	.075	†.07	.075	.075	.075	.0729	.07375	.0725	.07	.06937	.0688	.075	.065	.0775	.09¼	.0685	.0779	.0771	.0795	.0971	.05⅝	.0644	.0927
†.06½	.0675	.075	.0676	.075	†.07¼	†.07¼	†.07¼	†.07	.07625	†.07	.07¼	†.06¾	.0679	.075	.06¼	....	....	....	....	....	....	....	....	....	....
.071	.075	.075	†.07½	.07½	.0775	†.07¾	†.07¼	†.07½	.0775	†.07¼	.07375	.07375	.0721	.0775	.0675	.0808	.0969	.0732	.0818	.0799	.0833	.1035	.06¼	.0701	.0969
.075	.07375	.0788	†.07¾	.0812	.0812	.0812	†.07½	.0812	†.07¼	.08	†.07	†.07	.0767	.0812	.07¼	.0855	.0983	.07½	.0872	.0850	.0883	.1100	.06¾	.0733	.1039
.07⅝	.07¾	.08¼	.08¼	.08¼	.08¼	.08	.07¾	.07½	.07½	.07½	.07¼	.07¼	.0771	.08½	.07¼	.0837	.09¾	.07¾	.0859	.0816	.0885	.1125	.07	.0746	.1024
.06¼	.06½	.07	.07	.07	.07	.06¾	.06¾	.06⅝	.06½	.06⅝	.06⅛	.06	.0627	.07	.05⅝	.0756	.08⅞	.06¼	.0730	.0701	.0769	.09⅝	.05⅝	.0651	.0888
.06⅝	.06¾	.07¼	.07¼	.07¼	.07¼	.07⅛	.07	.06⅝	.06¾	.06⅝	.06⅜	.06⅝	.00656	.07¼	.06	....	....	....	....	....	....	....	....	....	....
.06¾	.06⅞	.07½	.07½	.07½	.07⅜	.07⅜	.07¼	.07	.06⅞	.06¾	.06⅝	.06½	.0694	.07½	.06½	.0774	.09¼	.07¼	.0790	.0759	.0827	.10¼	.06½	.0704	.0951
.07¼	.07⅝	.07½	.07⅝	.07⅝	.07⅝	.07½	.07½	.07¼	.07¼	.07¼	.07	.06⅝	.0726	.07⅝	.06⅝	.0798	.09½	.07¼	.0816	.0781	.0849	.10⅜	.06¾	.0722	.0976
.07	.07	.07½	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.07½	.07⅜	.07⅜	.07	.0713	.07¾	.06¾	.0793	.09¾	.07	.0797	.0790	.0825	.10¾	.06	.0700	.0949
.07¼	.07¼	.07¼	.07¼	.07½	.07⅝	.07¾	.07¾	.07¾	.07¾	.07⅜	.07½	.07½	.0723	.07¾	.07	.0829	.09	.07¼	.0847	.0811	.0934	.11¼	.07½	.0825	.1042
.07½	.07⅜	.07¾	.07¾	.08	.08	.08¼	.08¼	.08¼	.08¼	.08¼	.08¼	.08¼	.078	.08¼	.07½	.0905	.10	.07¾	.0941	.0871	.0982	.12	.07½	.0864	.1101
.07¾	.08	.08	.08	.08¼	.08¼	.08¼	.08¼	.08⅜	.08½	.08¾	.08¼	.08¼	.0801	.08½	.07¾	.0935	.10⅛	.08	.0980	.0892	.1038	.12⅜	.08	.0906	.1171
.08	.08¼	.08½	.08½	.08¾	.08¾	.09	.08¾	.08¾	.08¾	.08⅝	.08⅝	.08½	.0841	.09	.08	.1016	.12	.08½	.1062	.0971	.1138	.13⅛	.09	.0972	.1303
.08	.07½	.07½	.07½	.07	.07	.07	.07	.07	.07	.07	.07	.07	.0806	.09	.07	.0889	.10	.08	.0877	.09	.0919	.10½	.07	.0874	.0964
.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.0816	.08½	.08	.0849	.08½	.08¼	.0848	.085	....	....	....	....	....
.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.0916	.09½	.09	.0943	.09½	.09¼	.0948	.095	....	....	....	....	....
.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.0941	.09¾	.09¼	.0974	.09¾	.09½	.0973	.0975	....	....	....	....	....
.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.0966	.10	.09½	.0999	.10	.09¾	.0998	.10	....	....	....	....	....
.05¾	.05¾	.06½	.06½	.06½	.06½	.06½	.06½	.06⅝	.06⅛	.06⅛	.06	.05⅝	.0587	.06½	.05¼	.0706	.08	.06¼	.0755	.0658	.0744	.10⅜	.04⅛	.0549	.0939
.05⅝	.05⅝	.06½	.06½	.06½	.06½	.06½	.06⅝	.06¼	.06	.06	.05⅝	.05¼	.0571	.06½	.05	.0683	.08	.05½	.0716	.0614	.0784	.10⅜	.04⅛	.0541	.0927
.05	.05	.05⅝	.06½	.06½	.06½	.06⅜	.06¼	.06	.05⅝	.05½	.05½	.05⅛	.0522	.06⅛	.04¼	.0637	.07⅝	.05¼	.0656	.0619	.0691	.10⅜	.03⅝	.0474	.0908
.04⅞	.05	.05½	.06⅛	.06½	.06⅝	.06¼	.06	.06	.05⅝	.05¼	.05¼	.05⅛	.0509	.06½	.04	.0630	.07⅜	.05¼	.0645	.0616	.0685	.10⅜	.03½	.0463	.0900
.04⅝	.04⅞	.05½	.06½	.06½	.06½	.06¼	.06	.05⅝	.05½	.05¼	.05¼	.05⅛	.0502	.06½	.04	.0618	.07½	.04⅞	.0623	.0613	.0666	.10⅜	.03½	.0441	.0892
.07⅛	.07	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.0753	.08½	.06¾	.0803	.09	.06	.0777	.0828	.0726	.08½	.05½	.0780	.0672
.04¼	.04¼	.04¼	.04¼	.04¼	.04¼	.04⅛	.04	.03⅞	.03⅞	.03⅝	.03⅝	.03⅝	.0406	.04⅛	.03⅝	.0517	.06⅜	.04⅛	.0549	.0487	.0517	.06⅛	.04⅛	.0469	.0574
.04⅜	.04⅜	.04⅝	.04⅝	.04⅛	.04⅛	.04⅜	.04¼	.04¼	.04¼	.04¼	.04¼	.04¼	.044	.04⅝	.04¼	.0573	.07⅛	.04⅜	.0617	.0532	.0556	.06⅝	.04⅜	.0505	.0603
.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04	.03⅝	.03⅜	.03⅜	.03⅝	.03½	.03½	.0394	.04⅛	.03½	.0517	.07¼	.04	.0568	.0468	.0503	.06⅝	.04⅛	.0456	.0550
.05⅜	.05⅜	.05½	.05½	.05⅛	.05¼	.05¼	.05¼	.05¼	.05¼	.04⅝	.04⅝	.04⅝	.0546	.05⅝	.04⅝	.0651	.07¼	.05⅝	.0690	.0614	.0635	.07⅛	.05⅜	.0582	.0688
.05⅜	.05⅝	.05⅝	.05⅝	.05⅝	.05½	.05½	.05½	.05½	.05½	.05	.05	.04⅝	.0568	.06	.04⅝	.0667	.07¼	.06	.0703	.0632	.0663	.07⅜	.06	.0625	.0701
.04½	.04½	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.0446	.05	.04	.0569	.06½	.05	.0620	.0520	.0611	.06⅝	.05½	.0561	.0660
.06½	.06½	.06½	.06½	.06	.06	.06	.06	.06	.06	.06	.06	.06	.065	.07	.06	.0752	.08	.06½	.0743	.0761	.0710	.08	.06½	.0707	.0712
.06	.06	.06	.06	.05	.05	.05	.05	.05	.05	.05	.05	.05	.0579	.06¾	.03	.0708	.07½	.06	.0693	.0722	.0669	.07½	.05¼	.0662	.0675
.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.0632	.07	.06	.0714	.07⅝	.06⅝	.0728	.07	....	....	....	....	....
.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.073	.08	.07	.0814	.08¾	.07⅝	.0828	.08	....	....	....	....	....
.65	.62½	.57½	.57½	.55	.55	.52½	.52½	.52½	.52½	.50	.50	.47½	.613	.70	.47½	.526	.70	.45	.499	.5530	.6298	.80	.50	.7202	.5394
.82½	.82½	.80	.80	.70	.70	.70	.70	.70	.70	.65	.60	.60	.792	.90	.60	.706	.90	.60	.646	.7630	.7694	.85	.55	.8010	.6144
.02½	.02½	.02⅜	.02⅜	.02⅜	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.0245	.02⅞	.02¼	.0265	.03	.02¼	.0262	.0268	.0247	.02⅝	.02⅜	.0248	.0245
.03	.03	.03	.03	.03	.02⅜	.03	.03	.03	.03	.03	.02⅞	.02⅞	.0313	.03⅝	.02⅞	.0365	.04⅜	.03¼	.0363	.0367	.0313	.03⅝	.03	.0306	.0320
.55	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.45	.45	.547	.65	.45	....	....	....	....	....	....	....	....	....	....
.02⅜	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.02¼	.02	.02	.02	.0231	.02⅞	.02	.0267	.03⅛	.02¼	.0266	.0269	.0231	.02⅛	.02¼	.0235	.0226
.03	.02⅞	.02⅞	.02⅞	.02⅜	.02⅜	.02⅜	.02⅜	.02⅜	.02⅜	.02⅜	.02⅜	.02⅜	.03	.03⅜	.02⅜	.0359	.04¼	.03⅛	.0359	.0359	.0296	.03	.02⅞	.0298	.0294
.75	.75	.75	.80	.80	.80	.80	.80	.80	.80	.75	.70	.70	.80	.85	.70	.7428	.80	.70	.72	.76	.8394	1.00	.70	.9083	.7702
.03¾	.03¾	.04	.04	.04	.04	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.0381	.04	.03¾	.0387	.04¼	.03½	.0378	.0397	.0416	.04¼	.03⅞	.0421	.0411
.75	.75	.75	.75	.75	.80	.75	.75	.80	.80	.80	.80	.80	.714	.80	.65	.7397	.80	.65	.756	.72	1.018	1.25	.75	1.1384	.8481
.04⅜	.04⅜	.04⅜	.04⅜	.04¼	.04	.04⅛	.03⅞	.03⅞	.03⅞	.03⅞	.03½	.03½	.0426	.04⅝	.03½	.0441	.04⅜	.04	.0454	.0428	.0449	.04⅞	.04⅛	.0471	.0427
.04⅜	.04½	.04⅝	.04⅝	.04¼	.04¼	.04¼	.04	.04	.04	.04	.03⅝	.03⅝	.0440	.04	.03⅝	.0455	.05¼	.04¼	.0489	.0449	.0472	.05	.04¼	.0491	.0452
.02	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.0188	.02	.01¾	.0282	.03½	.02	.032	.025	.0269	.03	.02¼	.0248	.0290
.70	.65	.65	.65	.60	.60	.60	.60	.60	.60	.60	.60	.60	.65	.70	.60	.6724	.85	.65	.69	.66	.8692	1.00	.85	.8884	.85
.90	.85	.85	.85	.80	.80	.80	.80	.80	.80	.80	.80	.80	.85	.90	.80	.90	1.15	.90	.90	.90	1.15	1.15	1.15	1.15	1.15
.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.0556	.05¾	.05½	.0561	.06	.05¼	.0547	.0575	.06	.06	.06	.06	.06
.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.09½	.09½	.0986	.10	.09½	.0915	.09¾	.08¾	.0894	.0934	.0945	.09⅜	.09¼	.0937	.0954
.09	.09	.09	.09¼	.09	.09	.09	.09	.09	.09	.09	.08½	.08½	.09	.09½	.08½	.0850	.09	.08¼	.0840	.0859	.0911	.09¼	.09	.0912	.0910
.11½	.11½	.11½	.11½	.11½	.11⅜	.10½	.11½	.11½	.11¼	.11¼	.11¼	.11	.111	.11½	.10¾	.0966	.10¾	.09¼	.0938	.0994	.0947	.09½	.09¼	.095	.0944
.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.12½	.128	.13½	.09¾	.1155	.12¾	.10¾	.1116	.1194	.1222	.12¼	.12	.1225	.1219
.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.10	.08	.09	.10	.08	.1098	.14½	.08	.1042	.115	.08	.08	.08	.08	.08
.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.32	.32	.366	.37	.32	.3368	.37	.28	.31	.36	.2235	.25	.22	.2242	.2473
.02½	.02½	.02¼	.02¼	.02¼	.02⅛	.02⅛	.02⅛	.02⅛	.02⅛	.02	.02	.02	.0234	.02¾	.02	.0321	.05	.02½	.0364	.0279	.0394	.05	.02½	.0321	.0468
.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.23½	.22½	.22½	.246	.25½	.22½	....	....	....	....	....	....	....	....	....	....
.23	.23	.23	.23	.23	.23	.22½	.21½	.20	.20	.18	.15	.15	.218	.24	.15	....	....	....	....	....	....	....	....	....	....
.31	.31	.31	.31	.31	.31	.31	.30	.29	.29	.27	.25	.22	.298	.32	.22	.3646	.41½	.30	.41	.321	.1789	.23½	.14	.1546	.2031
.40	.40	.39½	.39½	.39	.39	.39	.39	.38	.38	.33	.31	.30	.39	.43	.30	.4745	.57	.39	.452	.496	.3186	.36	.26½	.2846	.3523
.09¼	.09¼	.09¼	.09¼	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.09½	.0922	.09½	.08½	.0890	.09½	.08½	.089	.089	.0906	.10	.07½	.0914	.0898
.08½	.08½	.08⅝	.08½	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.08⅝	.0831	.08¾	.07	.0779	.08½	.07	.0778	.078	.0800	.08½	.07½	.0771	.0830
.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11	.11½	.11½	.1150	.11½	.11½	.115	.115	.1057	.11½	.10	.10	.1114
.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11¼	.11	.11	.11	.0954	.11½	.08½	.085	.1058
.08½	.08½	.08½	.08½	.08½	.08½	.09	.09	.09	.09	.09	.09	.09	.0864	.09	.08¼	.0940	.10½	.08⅝	.096	.0920	.1020	.11⅜	.08½	.0918	.1125
.07¾	.07¾	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07	.07	.07	.0742	.07¾	.07	.0806	.09	.07⅝	.0832	.0781	.0803	.09	.07½	.0754	.0852
1.05	1.05	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.094	1.15	1.05	1.05	1.05	1.05	1.05	1.05	1.188	1.35	1.05	1.3192	1.057
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.013	2.10	2.00	2.0258	2.00
.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.0475	.04¾	.04¾	.0516	.05¼	.04¾	.0512	.0519	.0530	.05½	.05½	.0734	.0526
.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.07¼	.0725	.07¼	.07¼	.0730	.07½	.07¼	.0736	.07¼	.0708	.07½	.07	.07	.0715
.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.115	.11½	.11½	.1108	.11½	.11	.11	.1110	.1058	.11	.10½	.105	.1065
.03⅝	.03⅝	.03⅝	.03⅝	.03½	.03½	.03½	.03½	.03½	.03⅜	.03½	.03½	.02⅞	.0358	.02⅞	.02⅞	.0424	.05⅝	.03⅜	.0468	.0381	.0466	.05⅜	.03⅜	.0401	.0530
.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03⅜	.03¼	.03¼	.0336	.03⅜	.03¼	.0353	.03⅝	.03½	.035	.0355	.0339	.03½	.03¼	.0333	.0346
.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.0895	.09	.07⅝	....	....	....	....	....	....	....	....	....	....
.31	.31	.31½	.31½	.31½	.31½	.31½	.30½	.31½	.29½	.27	.27	.25	.32	.31½	.25	.3347	.43	.30	.3502	.32	.1946	.270	.1650	.1717	.2179
.39	.39	.39	.39	.39	.39	.39	.39	.38½	.38½	.37	.37	.35	.39	.40	.35	....	....	....	....	....	....	....	....	....	....
.48	.48	.48	.48	.48	.48	.48	.48	.47	.47	.45	.45	.41	.4812	.52	.41	.5457	.63	.46	.52	.59	.4137	.4450	.3600	.3934	.4338
.04	.04	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.0407	.04½	.03¾	.0508	.05½	.04½	.055	.047	.0514	.0575	.045	.0482	.0544
.06¼	.06¼	.06¼	.06¼	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.0634	.06½	.06¼	.0693	.08	.06¼	.0718	.0668	.0746	.085	.06	.0666	.0828

Minor Gasoline Tank Wagon Changes

Average Prices in 50 Cities Continue Slump Early in Year Followed by Rally and Another Decline

By C. O. Willson

The first half of 1930 in gasoline tank wagon prices, based on average quotations, brought a decline followed by an advance and another decline. Such a cycle within a period of six months is unusual.

The relatively rapid change in price trends is based on average conditions for the entire United States as reflected by tank wagon quotations in 50 representative cities scattered in 46 states. In the price changes of individual cities due to local conditions there were exceptions to the general trend.

The spread of a policy of basing gasoline tank wagon prices at consuming points on refinery and terminal prices was the outstanding development of the first six months. Early in the year the Standard Oil Co. of New Jersey announced its plan of establishing base prices at its refineries and water terminals along the East Coast. To the base price is added the transportation cost to the point of consumption plus a fair profit for marketing and the total determines the tank wagon price at its bulk stations.

The Standard Oil Co. of New York announced a similar policy for New York and the New England states followed by the Standard of Louisiana in Louisiana, Arkansas and Tennessee. Several companies made the plan effective at certain points in other territories so that its use was general in the coastal states from Texas to Maine.

While the tank wagon prices at consuming points has always been directly affected by changes in refinery prices on gasoline, up to the time of the Standard of New Jersey announcement there has never been any attempt to determine a definite marketing margin which could be applied to an entire territory. It is believed that with the spread of water transportation and the enlargement of crude oil and gasoline pipe line systems that this method of determining prices will become more and more important.

The plan is in line with the provisions of the Code of Practices for Marketing Refined Petroleum Products which has stressed the desirability of having posted prices at refineries as well as posted tank wagon and service station prices.

When the plan was announced, it resulted in a realignment in prices at numerous points, tank wagon schedules in some cities being reduced while those more distant from the base points were advanced. The six months was too brief a period to determine just how the new plan will work out. Companies which adopted it have not changed their policy of making local reductions in prices when necessary to meet competitive conditions.

TABLE NO. 1

Average Gasoline Tank Wagon Prices in Cents, Exclusive of Tax, in 50 Representative Cities for the Past Six Years

	1924	1925	1926	1927	1928	1929	1930
January 1	14.32	13.91	16.13	17.56	14.20	16.00	15 45
February 1	17.68	16.74	16.21	17.46	14.33	15.11	15.36
March 1	18.87	19.06	17.26	17.00	14 71	14.73	14.54
April 1	18 85	18.68	18.51	16.16	14.81	14.90	14.26
May 1	18.85	18.35	18.48	15.32	15.02	14.94	15.27
June 1	18.61	18.12	19.60	14.72	15.22	15.80	15.25
July 1	17.66	19.38	19.69	14.85	15 29	16.02	14.78
August 1	16.50	19.41	19.69	14.89	15.74	15.82	.....
September 1	15.75	16.70	19.58	14.62	16.04	15.74	.....
October 1	13.95	15 80	19.16	14.39	16.34	16.00	.....
November 1	13.75	15.52	18.18	14.32	16.28	15.82	.....
December 1	13.87	15.76	17.60	14.21	15.98	15.59	.....
Average (1st of mo.)	16.55	17.37	18.34	15.46	15.34	15.54	14 99

It is believed on the whole that it has contributed to more stable tank wagon and retail markets and weakened the position of the price cutter who generally endeavors to benefit from a local advantage in transportation or marketing costs or both.

Decline Early in Year

As shown in Table 1, average gasoline tank wagon prices declined steadily the first four months. Prices had started to recede late in 1929 following a gradual decline in refinery tank car prices. The wider spreads between tank car and tank wagon quotations were first brought about by local reductions which as usual finally spread to large areas.

In February, the Standard Oil Co. of Indiana announced reductions of 2 cents in its entire territory followed by the Standard Oil Co. of Nebraska. This affected a large area, representing approximately 30 per cent of the entire gasoline consumption in United States and brought the average net tank wagon price down to 14.54 cents on March 1. Additional scattered reductions materialized during March so that the average on April 1 was 14.26 cents per gallon, a decline of 1.19 cents since the first of the year.

In April the gasoline market at refineries started to improve and the change was soon reflected in tank wagon advances. On the twelvth of the month, the Standard Oil Co. of Indiana and the Standard Oil Co. of Nebraska announced general advances of 1 cent a gallon in gasoline and this lead was followed in other territories. By May 1 the average price had recovered 1 cent a gallon.

The refinery market again weakened in May. General advances in tank wagon prices became effective in Pennsylvania, Delaware and Ohio but scattered reductions materialized at several other points so that the average price of 15.25 cents on June 1 was slightly less than on the same date of the previous month.

The final month of the first half year brought continued weakness in the refinery gasoline market and average prices dropped to 14.78 cents on July 1. A large part of this decline can be accounted for by the drastic cut of 3 cents in California, Oregon, Washington and Nevada on June 15.

The price cut in the West Coast states climaxed an unsatisfactory price situation of several weeks' duration. Price cutting due to the overproduction of crude oil and gasoline was general and tank wagon and service station prices were quoted over a wide range. A chaotic condition followed the lowering of prices, many independent dealers continuing their policy of quoting under the general prices. At some points the retail price dropped 2 or 3 cents more than the state gasoline taxes. Since the end of the first half year prices in western states were returned to normal.

TABLE NO. 2

Following are the daily average tank wagon prices at Chicago for the past 17½ years, based on dump price of 100 gallons:

1913	14.84c
1914	12.07c
1915	11.04c
1916	17.16c
1917	20.03c
1918	22.27c
1919	22.15c
1920	25.45c
1921	20.28c
1922	20.23c
1923	17.05c
1924	17.68c
1925	16.27c
1926	17.03c
1927	14.71c
1928	14.25c
1929	15.00c
1930 (first 6 months)	14.44c

As the half year closed conditions pointed to lower tank wagon prices. The refinery market continued extremely weak early in July. This has meant exceptional spreads between delivered tank car and tank wagon prices at many points. It was feared that in addition to the local adjustments it would be necessary to make general reductions in several areas. Distributors were hopeful that the refinery prices would improve so there would be a return to more normal conditions and tank wagon prices could at least be maintained through the summer and early fall months, a period of heavy gasoline consumption.

Some changes were made during the first half year in the discounts allowed quantity buyers of gasoline. In general, the trend had been to allow the dealers who buy on tank wagon basis wider margins on which to operate. The policy of allowing special discounts to commercial discounts has also spread in several territories despite the efforts made to discourage this practice.

In some sections, particularly the Middle West and Southwest, the so-called "tank car sellers" of gasoline has increased in importance and this development has had its effect on tank wagon and retail prices.

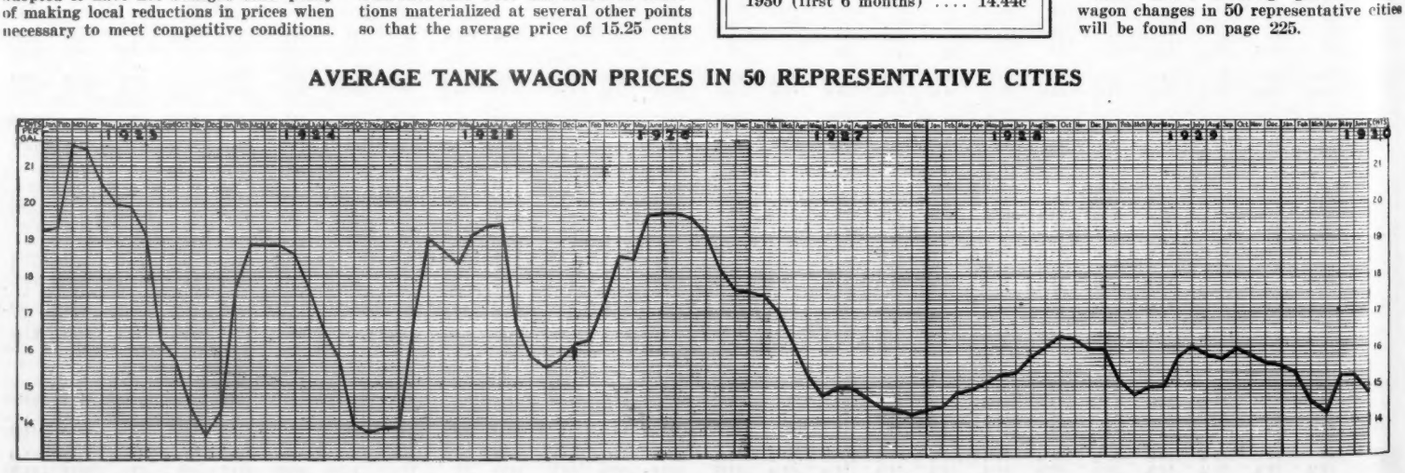
The plan of this type of jobber is to buy on a tank car basis from refiners and then distribute through a combination bulk and service station usually located adjoining a railroad siding. Prices to the consumer are from 1 to 4 cents a gallon under the quotations of other distributors.

Since the close of the half year some of the refiners in the West Coast states have announced their intention of trying out a new plan of handling the distribution of their products. It is proposed to change the relationship of the retailers from merchants to agents.

By this plan the retailers would be allowed a certain commission in the sale of gasoline and oil. On certain dates the commissions would be paid based on sales volume. By this method the refiners could retain control over the prices charged the consumer. This plan was in use several years ago in the West Coast states.

Note—Table showing gasoline tank wagon changes in 50 representative cities will be found on page 225.

AVERAGE TANK WAGON PRICES IN 50 REPRESENTATIVE CITIES



Prices are averaged first of month exclusive of taxes.

LOW REFINERY PRICES FIRST HALF OF YEAR

(Continued from Page 220)

last year. Pennsylvania is considered the barometer for the cylinder stock market and developments were watched closely. The explanation for the decline as usual rests with the increased output rather than decline in the demand. The high prices brought expansion programs in plant facilities and greater production of crude oils from which the best grades are most easily obtained. The result was a surplus of both and lower prices.

The Pennsylvania grade of bright stock dropped from a price of 43 cents in January to 30 cents in June and has since declined to 25 cents. In the New York export market a 600 steam refined cylinder stock in barrels dropped from 31½ to 25 cents a gallon.

In Oklahoma, the 150-160 grade of bright stock was advanced to 37 cents early in the year by several manufacturers and this price was maintained in contract shipments until June when the price was reduced to 32 cents. Competition in the sale of cylinder stocks is widespread and still lower prices were predicted at the close of the half year.

Neutral oils did not decline as rapidly as the cylinder stocks but were freely available in practically all refining areas. The higher viscosity grades which advanced rapidly in 1929 experienced the greatest price slump the first half of 1930.

Petroleum Wax

Petroleum wax continued the price declines which got under way early in 1929. With little change in the production stocks over the past year have accumulated steadily due to a decrease in both the export and domestic demand.

In the New York domestic market, the 120-122 grade brought an average price of 3.58 cents per pound the first half year. For the first half of 1929 the average was 4.68 cents and the last half 3.81 cents. In Oklahoma, the 124-126 grade averaged 2.34 cents the first half of 1930, 3.64 cents the first half of 1929 and 3.21 cents the first half of 1928. The high of the first half of the year was 2¾ cents and the low 2 cents.

GASOLINE TANK WAGON PRICES IN EFFECT DURING FIRST SIX MONTHS OF 1930, EXCLUSIVE OF TAXES, IN 50 REPRESENTATIVE CITIES WITH AMOUNT AND DATE OF CHANGES, ALSO HIGH AND LOW PRICES FOR 1928, 1929 AND FIRST SIX MONTHS OF 1930, WITH GASOLINE TAXES IN EFFECT JANUARY 1, 1928, 1929, 1930 AND JULY 1, 1930

	Prices Jan. 1, 1930	Price changes during 1st 6 mos. 1930					Prices June 30, 1930	High and low prices 1st 6 mos. 1930		1929		1928		Taxes Jan. 1, 1928	Jan. 1, 1929	Jan. 1, 1930	July 1, 1930
Birmingham, Ala.	13.0	2/17 15.0	4/15 16.0	5/21 15.0	....	....	15.0	16.0	13.0	18.0	13.0	18.0	14.0	4.0	4.0	4.0	4.0
Phoenix, Ariz.	15.5	2/1 14.0	5/27 13.0	....	....	....	13.0	15.5	13.0	14.0	14.0	18.0	14.0	4.0	4.0	4.0	4.0
Little Rock, Ark.	13.0	3/6 11.0	4/14 13.0	6/20 12.0	....	....	12.0	13.0	11.0	15.0	12.0	16.0	11.0	5.0	5.0	5.0	5.0
San Francisco, Calif.	17.0	4/22 18.5	6/15 15.5	....	....	....	15.5	18.5	15.5	17.0	12.0	14.0	14.0	3.0	3.0	3.0	3.0
Denver, Colo.	14.0	3/8 12.0	4/12 13.0	5/31 12.0	....	....	12.0	14.0	12.0	15.0	11.0	16.0	13.0	3.0	4.0	4.0	4.0
Hartford, Conn.	16.0	2/11 14.5	2/26 13.5	4/9 14.5	....	....	14.5	16.0	13.5	18.0	16.0	18.0	16.0	2.0	2.0	2.0	2.0
Dover Del.	15.0	5/29 16.0	....	....	....	....	16.0	16.0	15.0	17.0	15.0	18.0	16.0	3.0	3.0	3.0	3.0
Jacksonville, Fla.‡	16.0	2/6 14.0	4/22 15.0	....	....	....	15.0	16.0	14.0	18.0	16.0	18.0	13.0	5.0	5.0	6.0	6.0
Atlanta, Ga.‡	14.0	1/11 16.0	4/22 15.0	....	....	....	15.0	16.0	14.0	18.0	14.0	18.0	13.0	4.0	4.0	6.0	6.0
Boise, Idaho	19.5	2/8 18.5	....	....	....	....	18.5	19.5	18.5	20.5	17.5	20.5	19.5	4.0	4.0	4.0	5.0
Peoria, Ill.	16.2	2/17 14.2	4/12 15.2	....	....	....	15.2	16.2	14.2	16.2	14.2	15.2	9.0	2.0	....	3.0	3.0
Chicago, Ill.	14.0	4/12 15.0	....	....	....	....	15.0	15.0	14.0	16.0	14.0	15.0	14.0	2.0	....	3.0	3.0
Indianapolis, Ind.	16.2	2/17 14.2	4/12 15.2	....	....	....	15.2	16.2	14.2	16.2	14.2	15.2	10.2	3.0	3.0	4.0	4.0
Des Moines, Iowa	16.5	2/17 14.5	4/12 15.5	....	....	....	15.5	16.5	14.5	16.5	14.5	15.5	11.9	3.0	3.0	3.0	3.0
Wichita, Kans.	14.8	2/17 12.8	4/12 13.8	....	....	....	13.8	14.8	12.8	14.8	12.8	13.8	10.8	2.0	2.0	3.0	3.0
Louisville, Ky.	16.0	1/24 14.0	4/22 15.0	6/3 13.0	....	....	13.0	16.0	13.0	16.0	15.0	16.0	13.0	5.0	5.0	5.0	5.0
New Orleans, La.	10.0	4/15 11.0	6/17 9.5	....	....	....	9.5	11.0	9.5	13.5	10.0	14.5	10.5	*3.0	*3.0	*5.0	5.0
Augusta, Me.	16.0	2/1 15.8	2/11 14.8	3/6 13.8	4/9 14.8	4/29 15.8	15.8	16.0	13.8	17.0	16.0	18.0	17.0	4.0	4.0	4.0	4.0
Baltimore, Md.	15.0	1/6 13.2	....	....	....	....	13.2	15.0	13.2	16.0	14.0	16.0	15.0	4.0	4.0	4.0	4.0
Springfield, Mass	16.0	1/10 14.0	2/11 14.5	3/6 13.5	4/9 14.5	....	14.5	16.0	13.5	18.0	16.0	18.0	16.0	...	...	2.0	2.0
Detroit, Mich.	16.8	2/7 15.8	2/17 14.8	4/12 15.8	....	....	15.8	16.8	14.8	16.8	14.8	15.8	11.8	3.0	3.0	3.0	3.0
Duluth, Minn.	17.5	2/17 16.5	4/12 16.5	....	....	....	16.5	17.5	15.5	17.5	15.5	16.5	12.5	2.0	2.0	3.0	3.0
Natchez, Miss.	15.5	1/24 13.5	4/15 14.5	....	....	....	14.5	15.5	13.5	16.5	14.0	16.5	12.5	4.0	5.0	5.0	5.0
Kansas City, Mo.	15.9	2/17 13.9	4/12 14.9	....	....	....	14.9	15.9	13.9	15.9	13.9	14.9	10.9	*3.0	*3.0	*3.0	3.0
Helena, Mont.	20.5	2/8 18.5	4/12 19.5	..	....	....	19.5	20.5	18.5	20.5	19.5	20.5	19.5	3.0	3.0	5.0	5.0
Omaha, Neb.	16.25	2/17 14.25	4/12 15.25	....	....	....	15.25	16.25	14.25	16.25	14.25	15.25	13.25	2.0	2.0	4.0	4.0
Reno, Nev.	21.0	4/22 23.0	6/15 20.0	....	....	....	20.0	23.0	20.0	20.0	18.0	18.0	18.0	4.0	4.0	4.0	4.0
Newark, N. J.	15.0	1/6 13.5	....	....	....	....	13.5	15.0	13.5	15.0	14.0	16.0	15.0	2.0	2.0	2.0	2.0
Albuquerque, N. Mex.	15.0	4/17 16.0	6/17 11.0	....	....	....	11.0	16.0	11.0	17.0	15.0	17.0	14.0	5.0	5.0	5.0	5.0
New York, N. Y.	14.0	2/1 14.3	2/11 13.3	2/26 12.3	4/9 13.3	4/29 14.3	14.3	14.3	12.3	18.0	14.0	18.0	17.0	...	...	2.0	2.0
Charlotte, N. C.	12.0	1/6 15.3	3/29 14.3	5/19 15.3	....	....	15.3	15.3	12.0	16.0	12.0	17.0	15.0	4.0	4.0	5.0	5.0
Fargo, N. Dak.	18.9	2/17 16.9	4/12 17.9	....	....	....	17.9	18.9	16.9	18.9	16.9	17.9	12.0	2.0	2.0	3.0	3.0
Cleveland, Ohio	14.0	4/12 15.0	5/24 16.0	....	....	....	16.0	16.0	14.0	16.0	14.0	16.0	14.0	3.0	3.0	4.0	4.0
Tulsa, Okla.	11.0	4/15 12.0	....	....	....	....	12.0	12.0	11.0	14.0	10.0	14.0	10.0	3.0	3.0	4.0	4.0
Portland, Ore.	17.5	3/11 15.5	4/22 19.5	6/15 16.5	....	....	16.5	19.5	15.5	17.5	12.5	14.5	14.5	3.0	3.0	4.0	4.0
Philadelphia, Pa.	15.0	5/29 16.0	....	....	....	....	16.0	16.0	15.0	17.0	15.0	18.0	15.0	†3.0	†3.0	†4.0	3.0
Providence, R. I.	16.0	2/11 13.7	3/6 12.7	4/9 13.7	....	....	13.7	16.0	12.7	18.0	16.0	19.0	17.0	2.0	2.0	2.0	2.0
Charleston, S. C.	15.0	1/6 13.3	....	....	....	....	13.3	15.0	13.3	16.0	14.0	17.0	15.0	5.0	5.0	6.0	6.0
Huron, S. Dak.	17.3	2/17 15.3	4/12 16.3	....	....	....	16.3	17.3	15.3	17.3	15.3	16.3	14.5	4.0	4.0	4.0	4.0
Memphis, Tenn.	13.0	2/27 12.0	4/15 13.0	....	....	....	13.0	13.0	12.0	15.0	11.0	16.0	12.0	3.0	3.0	5.0	5.0
Dallas, Tex.	13.0	2/18 12.0	5/24 10.0	....	....	....	10.0	13.0	10.0	14.0	11.0	14.0	9.0	3.0	2.0	4.0	4.0
Salt Lake City, Utah	17.5	2/8 16.5	....	....	....	....	16.5	17.5	16.5	18.5	17.5	18.5	16.5	3.5	3.5	3.5	3.5
Burlington, Vt.	15.0	2/1 16.3	2/11 15.3	2/24 13.6	4/9 14.6	4/29 15.6	15.6	16.3	13.6	17.0	15.0	18.0	17.0	3.0	4.0	4.0	4.0
Norfolk, Va.	15.0	1/6 13.3	....	....	....	....	13.3	15.0	13.3	16.0	14.0	16.0	14.0	4.5	5.0	5.0	5.0
Washington, D. C.	15.0	1/6 13.7	....	....	....	....	13.7	15.0	13.7	16.0	14.0	16.0	15.0	2.0	2.0	3.0	2.0
Charleston, W. Va.	15.0	1/6 14.5	....	....	....	....	14.5	15.0	14.5	16.0	14.0	17.0	15.0	4.0	4.0	4.0	4.0
Milwaukee, Wis.	18.1	2/17 14.1	4/12 15.1	....	....	....	15.1	16.1	14.1	16.1	14.1	15.1	13.1	2.0	2.0	2.0	2.0
Casper, Wyo.	15.0	2/8 14.0	4/12 15.0	....	....	....	15.0	15.0	14.0	17.0	15.0	16.0	14.0	3.0	3.0	4.0	4.0
Seattle, Wash.	17.5	2/28 16.5	3/11 15.5	4/22 19.5	6/15 16.5	....	16.5	17.5	15.5	17.5	13.5	14.5	14.5	2.0	2.0	3.0	3.0
Minneapolis, Minn.	17.2	2/17 15.2	4/12 16.2	....	....	....	16.2	17.2	15.2	17.2	15.2	16.2	11.0	2.0	2.0	3.0	3.0
Average price	15.54	....	....	....	....	....	14.78	16.01	13.96	16.70	14.26	16.54	13.54	3.08	3.11	3.77	3.77

*Includes 1-cent city tax. †Pennsylvania tax paid by retailer. ‡Jacksonville prices include one-eighth-cent inspection fee but at Atlanta one-half-cent fee is not included.

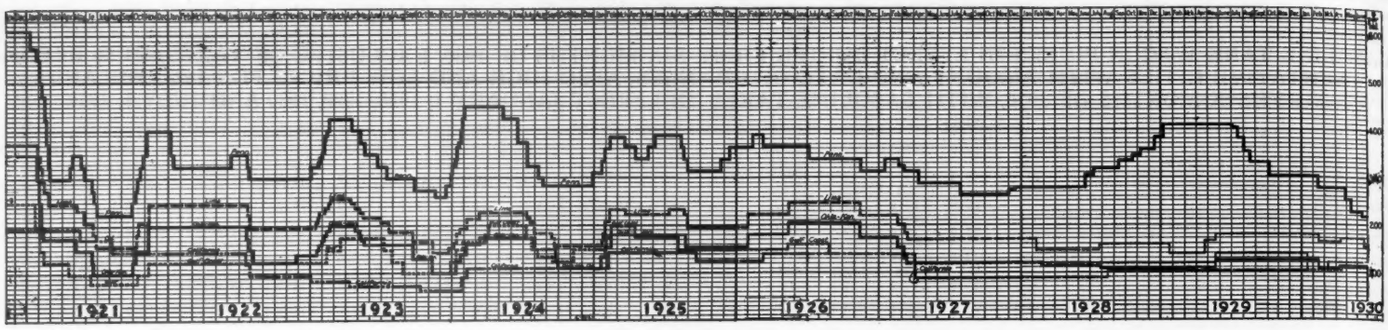
Notes—In Standard Oil Co. of Indiana territory, effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month. The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

At several points 2-cent per gallon discounts under tank wagon prices are allowed dealers and commercial accounts.

Crude Price Changes First Half Year

Trends Largely Governed by Local Conditions With Greatest Declines in Pennsylvania Fields. Early Decline in Mid-Continent

CRUDE OIL PRICE CHANGES IN REPRESENTATIVE FIELDS*



*The following prices are shown: Pennsylvania grade crude oil in National Transit lines; Lima, Ohio; Oklahoma-Kansas (32 gravity); Gulf Coast—Grade A; California—Signal Hill (25 gravity).

GULF COAST

Jennings and Sorrento—January 1, $1.25, January 15, $1; April 10, $1.10. Posted by Gulf Refining Co. of Louisiana.

High Island—January 1, $1; January 15, 85 cents; April 10, 95 cents. Posted by Gulf Pipe Line Co.

Markham—January 1, $1; January 15, 75 cents; April 10, 85 cents. Posted by The Texas Company.

Refugio—January 1, 70 cents; January 17, 50 cents; January 20, 55 cents. Posted by Gulf Coast Pipe Line Co. On April 1 Humble Oil & Refining Co. made first posting as follows: Refugio heavy crude (below 25 gravity), 75 cents; Refugio light crude (25 gravity and above), Grade B Gulf Coast gravity scale. Humble prices were met April 1 by Gulf Coast Pipe Line Co. On April 10 Refugio heavy crude advanced to 85 cents.

	Jan.	Jan.	Apr.
Grade A	1.30	1.05	1.10
Grade B*			
Gulf Coast light:*			
Below 25 gravity	1.15	.90	1.00
25 to 25.9 gravity	1.18	.93	1.03
26 to 26.9 gravity	1.21	.96	1.06
27 to 27.9 gravity	1.24	.99	1.09
28 to 28.9 gravity	1.27	1.02	1.12
29 to 29.9 gravity	1.30	1.05	1.15
30 to 30.9 gravity	1.33	1.08	1.18
31 to 31.9 gravity	1.36	1.11	1.21
32 to 32.9 gravity	1.39	1.14	1.24
33 to 33.9 gravity	1.42	1.17	1.27
34 to 34.9 gravity	1.45	1.20	1.30
35 and above†	1.48	1.23	....
35 to 35.9 gravity	1.49	1.23	1.33
36 to 36.9 gravity	1.53	1.26	1.36
37 to 37.9 gravity	1.57	1.29	1.39
38 to 38.9 gravity	1.61	1.32	1.42
39 to 39.9 gravity	1.65	1.34	1.44
40 to 40.9 gravity	1.69	1.36	1.46
41 to 41.9 gravity	1.73	1.38	1.48
42 to 42.9 gravity	1.77	1.40	1.50
43 to 43.9 gravity	1.81	1.42	1.52
44 and above	1.85	1.44	1.54

*The Texas Pipe Line Co. makes separate classification for Grade B and Gulf Coast light, posting Grade B as flat price same as posting at below 25 gravity Gulf Coast light oil. All other purchasers make no separate classification of "Gulf Coast light" but apply gravity scale to Grade B. Until April 1, 1930, Humble Oil & Refining Co. and Gulf Pipe Line Co. gravity scale ended at "35 gravity and above." Effective April 1, Humble, followed by Gulf, extended Grade B gravity scale to "44 gravity and above," posting same prices as the Texas Pipe Line Co.'s Gulf Coast light scale.

†Humble Oil & Refining Co., Gulf Pipe Line Co. and Magnolia Pipe Line Co. only to April 1 when gravity scale extended.

MEXICAN CRUDES

	Jan.	Feb.	Mar.	Apr.	May	June
Panuco heavy, f.o.b. Tampico	.65	.65	.67	.67	.60	.60

Note—Prices based on transactions for previous month.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

Darst Creek—Posted January 15, $1.05, by Humble Oil & Refining Co., Texas Pipe Line Co. and Magnolia Petroleum Co.; April 10, $1.15.

Lytton Springs—Posted by the Magnolia Petroleum Co. and Humble Pipe Line Co. under the Mid-Continent gravity schedule.

Thrall—Effective March 16, 1926, Magnolia Petroleum Co. posted same price as corresponding grade Mid-Continent crude less 19½ cents freight per cwt.

Pettus—First posting April 1 at $1.30; April 10, $1.40; posted by Humble Oil & Refining Co.

Salt Flat—January 1, $1.25; January 15, $1.05; April 10, $1.15; posted by Humble Oil & Refining Co., the Texas Pipe Line Co. and Magnolia Petroleum Co.

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

	Jan. 1	Jan. 1*	Feb. 15†	Apr. 10‡
Below 25 gravity	.85	.70	.60	.75
25 to 25.9 gravity				
26 to 26.9 gravity	.95	.75	.72	.85
27 to 27.9 gravity	1.00	.85	.78	.90
28 to 28.9 gravity	1.05	.90	.84	.95
29 to 29.9 gravity				
30 to 30.9 gravity	1.15	1.05	.96	1.05
31 to 31.9 gravity	1.20	1.15	1.02	1.10
32 to 32.9 gravity	1.25	1.25	1.08	1.15
33 to 33.9 gravity	1.30	1.30	1.11	1.18½
34 to 34.9 gravity	1.35	1.35	1.14	1.22
35 to 35.9 gravity	1.40	1.40	1.17	1.25½
36 to 36.9 gravity	1.45	1.45	1.20	1.29
37 to 37.9 gravity	1.50	1.50	1.23	1.32½
38 to 38.9 gravity	1.55	1.55	1.26	1.36
39 to 39.9 gravity	1.60	1.60	1.29	1.39½
40 to 40.9 gravity	1.65	1.65	1.32	1.43
41 to 41.9 gravity	1.70	1.70	1.35	1.46½
42 to 42.9 gravity	1.75	1.75	1.38	1.50
43 to 43.9 gravity	1.80	1.80	1.41	1.53½
44 gravity and above	1.85	1.85	1.44	1.57

Note—Gravity price schedule includes postings of all major companies in field with exceptions shown.

Postings by—Prairie Oil & Gas Co., The Texas Company and Sinclair Crude Oil Purchasing Co. includes Oklahoma, Kansas and North Texas. Magnolia Petroleum Co. includes Oklahoma, Kansas, North Texas, Panola County in East Texas, Lytton Springs in Southwest Texas. Humble Oil & Refining Co. includes North Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona, Lytton Springs and Corsicana light. Carter Oil Co. and Gypsy Oil Co. includes Oklahoma and Kansas.

*Posted by Magnolia Petroleum Co. only. †Adopted by Humble Oil & Refining Co. January 15; Carter Oil Co., January 16; Magnolia Petroleum Co. in Texas, January 16, and Oklahoma and Kansas, January 17; Sinclair Oil & Gas Co., February 13; Prairie Oil & Gas Co. and other major buyers, February 15. ‡For North Central and East Texas fields below 25 gravity, 72 cents; 25 to 25.9, 77 cents; 26 to 26.9, 82 cents; 27 to 27.9, 87 cents; 28 to 28.9, 92 cents; 29 to 29.9, 97 cents; 30 to 30.9, $1.02; 31 to 31.9, $1.07; 32 to 32.9, $1.12; 33 to 33.9, $1.17; 34 gravity and above same as Oklahoma and Kansas. Posted April 10, 1930, by Carter Oil Co. (beginning at 25° and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24° and below, the Magnolia Petroleum Co. alone excepted. The Magnolia on April 10 posted the following prices—Below 26 gravity, 70 cents; 26-26.9, 76 cents; 27-27.9, 82 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31° up to and including 44° and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

MIDDLE WESTERN STATES

	Ohio Oil Co. Jan. 1	Jan. 20	Feb. 6	Feb. 15	Feb. 17	Apr. 11	June 5	June 26
Lima	1.80	....	....	1.65	....	1.70	....	1.55
Wooster	1.90	....	....	1.75	....	1.80	....	1.70
Illinois	1.75	....	....	1.60	....	1.65	....	....
Indiana	1.57	....	....	1.42	....	1.47	....	1.32
Princeton	1.75	....	....	1.60	....	1.65	....	....
Plymouth	1.28	....	....	1.18	....	1.23	....	....
Western Kentucky	1.68	....	....	1.50	....	1.55	....	....
Dundee, Mich.‖	....	....	....	....	....	....	....	....
Upper and lower Traverse sands, Michigan‖	....	....	....	....	....	....	....	....
Midland, Mich.*	1.50	....	1.25	....	....	....	1.55	....
Saginaw, Mich., Saginaw sand†	1.89	....	....	....	....	....	....	....
Saginaw, Mich., Berea sand†	1.79	....	....	....	....	....	....	....
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky‡	1.50	....	....	....	....	....	....	....
Oil in line in Stoll Oil Refinery Co. in Oil City, Ky.§	1.70	1.55	....	....	1.45	....	....	....
Oil Springs (Canada)¶	2.27	....	....	2.12	....	....	....	2.02
Petrolia (Canada)¶	2.20	....	....	2.15	....	....	....	1.95

*Posted by Pure Oil Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment; same as Mid-Continent gravity scale.

	Jan. 1
Corsicana heavy	.80

Posted by Magnolia Petroleum Co.

ROCKDALE-MINERVA

	Jan. 1	Jan. 15	Jan. 16	Apr. 10
Up to 37.9 gravity	1.25	....	....	....
38 to 38.9 gravity	1.27	....	....	....
39 to 39.9 gravity	1.29	....	....	....
40 gravity and above	1.31	....	....	....
Luling	.90	....	.75	.85
Callihan	1.75	....	....	....
Mirando	.90	.75	.70	.85
Corsicana heavy	.80	....	....	....
Salt Flat	1.25	1.05	....	1.15
Pettus	....	....	....	1.40
Somerset—				
28 to 28.9 gravity	1.05	....	....	....
29 to 29.9 gravity	1.05	....	....	....
30 to 30.9 gravity	1.05	....	....	....
31 to 31.9 gravity	1.05	....	....	....
32 to 32.9 gravity	1.05	....	....	....
33 to 33.9 gravity	1.07	....	....	....
34 to 34.9 gravity	1.09	....	....	....
35 to 35.9 gravity	1.11	....	....	....
36 to 36.9 gravity	1.13	....	....	....
37 to 37.9 gravity	1.15	....	....	....
38 gravity and above	1.17	....	....	....

*Grayburg Pipe Line Co. only.

Note — Luling and Corsicana heavy posted by the Magnolia Petroleum Co. and Grayburg Pipe Line Co. Rockdale-Minerva by Kent-Middleton Refining Co. Callihan (Live Oak and McMullen Counties) by Dependable Oil Co. Mirando (Webb, Jim Hogg and Zapata Counties) by Texpata Pipe Line Co., Magnolia Pipe Line Co., Humble Oil & Refining Co. and the Crown Central Pipe Line Co. Somerset posted by Grayburg Pipe Line Co., Pioneer Oil Refining Co. and Witherspoon Refining Co.

CANADIAN FIELDS

	Jan. 1	Feb. 15	Apr. 11
Oil Springs	2.27	2.12	2.17
Petrolia	2.20	2.15	2.10

Posted by Imperial Oil Co., Ltd.

WEST TEXAS

Crane, Upton, Pecos, Crockett, Winkler, Mitchell, Texas, and Lea, New Mexico

	Jan. 1	Jan. 15*	Apr. 10
Below 25 gravity	.70	.55	.65
25 to 25.9 gravity	.74	.58	.68
26 to 26.9 gravity	.78	.61	.71
27 to 27.9 gravity	.82	.64	.74
28 to 28.9 gravity	.86	.67	.77
29 to 29.9 gravity	.90	.70	.80
30 to 30.9 gravity	.94	.73	.83
31 to 31.9 gravity	.98	.76	.86
32 to 32.9 gravity	1.02	.79	.89
33 to 33.9 gravity	1.06	.82	.92
34 to 34.9 gravity	1.10	.85	.95
35 to 35.9 gravity	1.14	.88	.98
36 gravity and above	1.18	.91	1.01

Posted by Humble Oil & Refining Co., Kay

(Table Continued on Next Page)

EASTERN STATES

	Jan. 1	Feb. 5	Feb. 17	Apr. 11	May 1	May 2	May 16	June 2	June 17
Pennsylvania grade oil in New York Transit Lines (N. Y.)*	3.05	3.00	2.75	....	2.50	....	....	....	....
Bradford oil in National Transit Lines (Pa.)*	3.05	3.00	2.75	....	2.50	....	....	....	....
Pennsylvania grade oil in National Transit Lines (Pa.)	3.05	....	2.80	....	2.55	....	2.30	....	2.20
Pennsylvania grade oil in South West Pennsylvania Line (W. Va.)	3.00	....	2.75	....	2.50	....	2.25	....	2.15
Pennsylvania grade oil in Eureka Lines (Pa.)	2.90	....	2.65	....	2.40	....	2.15	....	2.05
Pennsylvania grade oil in Buckeye Lines (Ohio)	2.70	....	2.45	....	2.20	....	1.95	....	1.90
Corning grade oil in Buckeye Lines (Ohio) 25-cent grade	1.80	....	1.65	....	....	1.75	....	....	....
Somerset grade oil in Eureka Pipe Line Co. lines	....	....	....	1.31	....	....	....	....	....
Somerset in Cumberland Lines (Ky.)	1.55	....	1.37	1.47	....	....	....	....	....
Ragland grade oil in Cumberland Lines (Ky.)	.60	....	....	....	....	....	....	....	....
Wayne district in Cumberland Pipe Lines	1.42	....	1.24	1.34	....	....	....	....	....
Bradford district (Tide Water Pipe Line Co.)	....	....	....	....	....	....	2.50	2.40	2.25
Allegany district (Tide Water Pipe Line Co.)	....	....	....	....	....	....	2.50	2.40	2.25

Posted by Joseph Seep Purchasing Agency.

*Joseph Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16. Prices shown after that date posted by Tide Water Pipe Line Co.

County Gas Co., Gulf Refining Co. and Magnolia Petroleum Co.

*Humble Oil & Refining Co., January 15, and Magnolia Petroleum Co., January 16.

Howard and Glasscock, Texas

	Jan. 1	Jan. 15*	Apr. 10
Below 25 gravity	.70	.55	.65
25 to 25.9 gravity	.74	.58	.68
26 to 26.9 gravity	.78	.61	.71
27 to 27.9 gravity	.82	.64	.74
28 to 28.9 gravity	.84	.66	.76
29 to 29.9 gravity	.86	.68	.78
30 to 30.9 gravity	.88	.70	.80
31 to 31.9 gravity	.90	.72	.82
32 to 32.9 gravity	.92	.74	.84
33 to 33.9 gravity	.94	.76	.86
34 to 34.9 gravity	.96	.78	.88
35 to 35.9 gravity	.98	.80	.90
36 to 36.9 gravity	1.00	.82	.92

*Posted by Humble Oil & Refining Co., January 15. Magnolia Petroleum Co. posted Howard-Glasscock crude same schedule as West Texas January 16.

	Jan. 1	Apr. 10
Chalk	.65	.75

TEXAS PANHANDLE

Gray County

	Jan. 1	Jan. 15*	Apr. 10
Below 27 gravity	.90	...	...
27 to 27.9 gravity	.90	.69	...
28 to 28.9 gravity	.90	.69	.75½
29 to 29.9 gravity	.95	.75	.80½
30 to 30.9 gravity	1.00	.81	.85½
31 to 31.9 gravity	1.05	.87	.90½
32 to 32.9 gravity	1.10	.93	.95½
33 to 33.9 gravity	1.15	.96	1.00½
34 to 34.9 gravity	1.20	.99	1 05½
35 to 35.9 gravity	1.25	1.02	1.09
36 to 36.9 gravity	1.30	1.05	1 12½
37 to 37.9 gravity	1.35	1.08	1.16
38 to 38.9 gravity	1.40	1.11	1.19½
39 to 39.9 gravity	1 45	1.14	1.23
40 to 40.9 gravity	1 50	1.17	1.26½
41 to 41.9 gravity	1.55	1.20	1.30
42 to 42.9 gravity	1 60	1.23	1 33½
43 to 43.9 gravity	1.65	1.26	1.37
44 gravity and above	1 70	1.29	1 40½

*Humble Oil & Refining Co., January 15; Magnolia Petroleum Co., January 16.

Carson and Hutchison Counties

	Jan. 1	Jan. 15*	Apr. 10
Below 31 gravity	.90	.72	...
31 to 31.9 gravity	.90	.72	.77½
32 to 32.9 gravity	.95	.78	.82½
33 to 33.9 gravit	1.00	.81	.87½
34 to 34.9 gravity	1 05	.84	.92½
35 to 35.9 gravity	1 10	.87	.96
36 to 36.9 gravity	1.15	.90	.99½
37 to 37.9 gravity	1 20	.93	1.03
38 to 38.9 gravity	1.25	.96	1 06½
39 to 39.9 gravity	1 30	.99	1.10
40 to 40.9 gravity	1 35	1.02	1 13½
41 to 41.9 gravity	1 40	1.05	1 17
42 to 42.9 gravity	1 45	1.08	1.20½
43 to 43.9 gravity	1.50	1 11	1 24
44 gravity and above	1.55	1.14	1.27½

*Humble Oil & Refining Co., January 15; Magnolia Petroleum Co., January 16.

Wheeler County

	Jan. 1	Jan. 15*	Apr. 11
Below 29 gravity	.90	.70	...
29 to 29.9 gravity	.90	.70	.75½
30 to 30.9 gravity	.95	.76	.80½
31 to 31.9 gravity	1 00	.82	.85½
32 to 32.9 gravity	1 05	.88	.90½
33 to 33.9 gravity	1.10	.91	.95½
34 to 34.9 gravity	1.15	.94	1.00½
35 to 35.9 gravity	1.20	.97	1 04
36 to 36.9 gravity	1.25	1.00	1.07½
37 to 37.9 gravity	1 30	1.03	1.11
38 to 38.9 gravity	1.35	1.06	1 14½
39 to 39.9 gravity	1 40	1.09	1.18
40 to 40.9 gravity	1 45	1 12	1 21½
41 to 41.9 gravity	1 50	1.15	1.25
42 to 42.9 gravity	1 55	1 18	1.28
43 to 43.9 gravity	1.60	1 21	1.32
44 gravity and above	1.65	1.24	1 35½

*Humble Oil & Refining Co., January 15; Magnolia Petroleum Co., January 16.

	Jan. 1
Chalk	.65

Posted by Magnolia Petroleum Co.

Note—In Noel-McConnell district Prairie Oil & Gas Co. posted April 10, below 30°, 75½ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

ARKANSAS-NORTH LOUISIANA

Caddo, Bull Bayou, Pleasant Hill, Zwolle, Holly, Crichton, DeSoto, Haynesville, Homer (La.), and El Dorado, Ark.

	Jan. 1	Jan. 15*	April 10†
Below 25 gravity	....	....	.72
25 to 25.9 gravity	....	....	.77
26 to 26.9 gravity	....	....	.82
27 to 27.9 gravity	....	....	.87
Below 28 gravity	1.00	.78	...
28 to 28.9 gravity	1.05	.84	.92
29 to 29.9 gravity	1.10	.90	.97
30 to 30.9 gravity	1 15	.96	1 02
31 to 31.9 gravity	1 20	1.02	1.07
32 to 32.9 gravity	1 25	1.08	1.12
33 to 33.9 gravity	1 30	1.11	1.17
34 to 34.9 gravity	1 35	1 14	1.22
35 to 35.9 gravity	1 40	1 17	1 26¾
36 to 36.9 gravity	1.45	1.20	1.29
37 to 37.9 gravity	1.50	1.23	1.32½
38 to 38.9 gravity	1.55	1 26	1.36
39 to 39.9 gravity	1 60	1.29	1 39¼
40 to 40.9 gravity	1 65	1.32	1 43
41 to 41.9 gravity	1.70	1.35	1.46¾
42 to 42.9 gravity	1 75	1.38	1.50
43 to 43.9 gravity	1 80	1.41	1 53½
44 and above gravity	1.85	1.44	1.57

Major companies posting are: Magnolia Petroleum Co., Pine Island (Caddo), Haynesville, Bull Bayou and El Dorado.

Standard Oil Co. of Louisiana and Gulf Refining Co., all fields.

Atlantic Oil Producing Co., Homer, Haynesville and West El Dorado.

The Texas Company, Caddo, Bull Bayou and Crichton.

Louisiana Oil Refining Corp., all fields.

*Posted by Texas Pipe Line Co. January 15. Other companies, January 16. †Posted by Texas Pipe Line Co. April 10; other companies, April 11. Schedule of Magnolia Petroleum Co. starts at below 28 gravity, 57 cents.

Stephens

	Jan. 1	Apr. 11
Below 28 gravity	.90	.76
28 to 28.9 gravity	.94	.81
29 to 29.9 gravity	.98	.86
30 to 30.9 gravity	1 02	.91
31 to 31.9 gravity	1 06	.96
32 and above gravity	1.10	1.01

Posted by Atlantic Oil Refining Corp. and Louisiana Oil Refining Corp.

Smackover

	Jan. 1	Apr. 11
Below 24 gravity	.85	.90
Above 24 gravity	1.00	1.05

Posted by Standard Oil Co., The Texas Company, Gulf Refining Co., Atlantic Oil Producing Co., Louisiana Oil Refining Corp. and Magnolia Petroleum Co.

	Jan. 1	Jan. 17	Apr. 11
Cotton Valley (below 36) and Sarepta-Carterville	.85	.80	.85
Bellevue	1 80	1.05	1.15
Urania	1.10	....	.95
East El Dorado	.85	....	.90

Cotton Valley—Standard Oil Co. of Louisiana, Magnolia Petroleum Co. and Louisiana Oil Refining Corp.

Bellevue—Standard Oil Co. of Louisiana, Gulf Refining Co. and Louisiana Oil Refining Corp.

Calion (East El Dorado)—Gulf Refining Co.

*Standard of Louisiana posted Cotton Valley and Sarepta-Carterville crude 36 gravity and above on regular Mid-Continent crude price schedule.

ROCKY MOUNTAIN FIELDS

	Jan. 1	Feb. 15	Apr. 11
Salt Creek:			
29 to 29.9 gravity	1.10	.90	1.00
30 to 30.9 gravity	1.15	.96	1.05
31 to 31.9 gravity	1.20	1.02	1.10
32 to 32.9 gravity	1.25	1.08	1.15
33 to 33.9 gravity	1.30	1.11	1.18½
34 to 34.9 gravity	1.35	1.14	1.22
35 to 35.9 gravity	1.40	1.17	1.25½
36 to 36.9 gravity	1.45	1.20	1.29
37 gravity and above	1.50	1.23	1.32½
Rock Creek (Wyo.)	1.40	1.25	1.35
Big Muddy	1.43	1.33	1.38
Mule Creek	1.20	....	....
Grass Creek, light	1.65	1.45	1.55
Grass Creek, heavy	.90	....	....
Four Bear	.85	....	....
Elk Basin	1.65	1.45	1.55
Lance Creek	1.68	1.53	1.63
Poison Spider	1.00	....	....
Notches	.65	....	....
Rex Lake	1.10	....	....
Osage	1.65	1.53	1.63
Lost Soldier	1.05	....	1.00
Greybull-Torchlight	1.65	1.45	1.55
Hamilton Dome	.85	....	....
Cat Creek (Mont.)	1.48	1.45	1.55
Sunburst	1.75	1.65	....
Artesia (N. Mex.)	1.08	1.00	1.05
Hogback	1.70	1.40	....
Pedro	1.25	1.00	1.05
Iles, 33 grav. and above	.99	.87	....
Below 33 gravity	.87	.65	....
Pondera (Mont.)*	....	....	....
Lea County (see gravity table)	....	....	....

Note—Rock Creek, Big Muddy, Mule Creek, Grass Creek, light and heavy, Elk Basin, Lance Creek, Rex Lake, Sunburst and Artesia posted by Ohio Oil Co.; all others and Grass Creek light posted by Midwest Refining Co.

*Pondera crude oil, $1.80 on February 1 and $1.55 on April 10.

PANHANDLE AND NORTH TEXAS WERE VERY BUSY

(Continued from Page 162)

the Panhandle district, which are Moore, Carson, Hutchinson, Potter, and possibly other counties, and the companies' subsidiaries operating in this district have been leasing many thousands of acres with the idea of exploring for gas, consequently many fests have started in various parts of the district and the next few months will see many more, for the companies will be extremely desirous of having a sufficient quantity to fill their lines and guaranteeing plenty of pressure to their consumers. As oil production is not especially desirable under the present conditions when there is a vast potential overproduction, and all fields in Texas will no doubt be prorated under the "blanket" form of curtailment, exploration for gas is likely to receive a great impetus.

Another important discovery of the Panhandle district, in Moore County, was the Operators Royalty Co. and Dana Oil & Gas Co.'s No. 1 Jones in the CSL, Section 164, Block 3, T.&N.O. Survey, in the northern part of the county, over 15 miles northeast of the Armstrong-Byrd Pool in Block 3, G.&M. Survey.

The test encountered the first oil showing at 3,360 feet and the second lime pay at 3,378-95 feet. It flowed 130 bbls. the first hour, 100 bbls. the second hour and 85 bbls. the third hour. Oil production decreased in the well to about 20 bbls. per hour, and water increased, but the well opened up a new area to possible production. Twenty-six million feet of gas came in with the oil. Total depth of the hole was 3,410 feet.

The cut in the price of crude oil in Gray County, ranging from 21 to 41 cents, on January 15 and 16 did not seem to affect production any, for the operators and companies maintained drilling activities to about the same level as they had been running.

New Production in Jack County

The Prairie Oil & Gas Co.'s No. 1 W. B. Munson, in the NW cor. of Section 3, B.S.&F. Survey, Jack County, was an interesting well of this section, for it topped a deep pay at 4,685 feet and tested 87 bbls. on the first hour test and at a total depth of 4,702 feet it flowed 168 bbls. per day, the oil testing 40.5 gravity. This was the second deep test in the county showing for a commercial producer, opening much territory to deep exploration. The well is east of the Buttram Pool, which produces from a pay found around 2,400-2,500 feet. The Texas Company has the other deep producing well of the county on its Shanafelt lease in the Bryson Pool.

Added interest was given to Collingsworth County the first part of April when Shoupe Brothers encountered oil and gas in their No. 1 Aldous in Section 96, Block 16, H.&G.N. Survey, near the northern boundary of the county and on the southern flank of the granite ridge which runs through the Panhandle district. The test topped a granite wash pay at 2,194 feet and was shut down at 2,198 feet, making 10 bbls. of 34 gravity oil and 500,000 feet of gas. This test gave prestige to the county, especially to this area.

Spectacular Well in Young County

Nash & Windfohr brought in the most phenomenal and spectacular well of the six month's period in the Wichita Falls district when their No. 1 McCloud, in the Graham Pool, Young County, topped a deep pay formation in the Big Bend horizon at 3,752 feet and was completed for a 1,000-bbl. per hour producer at a total depth of 3,759 feet, flowing wild for several hours before being brought under control and shut in for storage and pipe line connections. Many shallow producers were located around this test, but it was only the second deep producer in the field and the first one to make such an unexpected flow. Several offset tests have been drilled in an effort to obtain production from this same pay horizon, but most of them have failed, while others have made but insignificant wells.

The well stimulated leasing and drilling activities in the area and much money changed hands for surrounding leases, and many wells have been drilled in the pool. Another deep well in this area, 2½ miles northwest of the Nash & Windfohr deep producer came in at 75 bbls. at a total depth of 3,856 feet after topping the Caddo lime at 3,855 feet. This well opens up more area between the two deep producers to possible production, and other acreage surrounding the new well. This well was discovered the fore part of July and created more interest in the Graham area. It belongs to the Green Oil & Refining Co. and is located on the Morgan farm in T.E.&L. Survey No. 3,413.

All of these wells, with the discovery of the Riggs and Taack Pool north of New Castle, and the prolific Olney Pool, have combined to make Young County the most active county in the Wichita Falls district, although many dry holes are abandoned each week in this county. Production is found at shallow and greater depths, and the shallow wells are spudded and completed within a week or 10 days, making it a rather difficult job for the oil scouts to keep up with all of the machines and rigs which are seeking production over the county.

Shackelford County

E. J. Stumps' No. 1 Brewster in Section 48, Blind Asylum lands, eastern Shackelford County, opened up more acreage to production the first of April when it was completed for a 325-bbl. well in the Ibex sand at 2,105-06 feet. It was later deepened to 2,119 feet, but was plugged back on account of encountering water at 2,117 feet. It was put on the pump after plugging back and made 150 bbls. per day on the pump. The Phillips Petroleum Co.'s production is west of this semiwildcat discovery.

Many Semiwildcats

Many semiwildcats were interesting features in the Ranger and Wichita Falls districts during the past six months, but the Lone Star Gas Co.'s No. 1 McKelvain in the E half of Section 2, Block C, S.P.R.R. Survey, Stephens County, was one of the most interesting in the former district. This well, in the midst of a flock of gassers, and in an area where gas only is generally drilled for, encountered a sand at 3,485 feet and came in for a 50-bbl. oil well with 8,000,000 feet of gas. Another such well was brought in by the same company on the Brooks farm. This test was their No. 3 well in the southeast part of Section 54, Block 7, T.&P. Survey, in the SW cor. of the county. It came in as a well estimated good for 3,500 bbls. per day, and was completed at a total depth of 3,375 feet.

TEXAS PANHANDLE

Summary of Wells Completed, First Six Months, 1930

County—	Comp.	Prod.	Dry	Gas
Carson	36	4,972	5	10
Cochran	1	0	1	0
Donley	1	0	1	0
Gray	132	93,946	14	14
Hockley	1	0	1	0
Hartley	1	0	0	1
Hutchinson	40	6,485	4	4
Lamb	1	0	1	0
Moore	5	425	1	3
Motley	1	0	1	0
Potter	2	0	0	2
Wheeler	50	865	6	41
Total	271	106,693	35	75
Total first 6 mo. 1929	223	99,846	26	54
Difference	48	6,847	9	21

COMPLETIONS BY MONTH

Month—	Comp.	Prod.	Dry	Gas
January	36	11,710	6	11
February	35	13,110	7	8
March	24	4,355	4	11
April	38	15,104	6	9
May	73	39,386	7	17
June	65	23,028	5	19
Total	271	106,693	35	75

NORTH CENTRAL TEXAS

Summary of Wells Completed, First Six Months, 1930

County—	Comp.	Prod.	Dry	Gas
Archer	259	8,273	133	0
Baylor	39	3,045	21	0
Brown	142	2,409	89	3
Callahan	77	349	62	5
Clay	15	45	12	1
Coleman	111	2,804	66	9
Comanche	13	28	6	5
Cooke	46	500	32	0
Eastland	63	1,263	32	12
Erath	14	0	8	6
Fannin	1	0	1	0
Foard	4	79	2	1
Grayson	4	0	4	0
Haskell	4	0	3	1
Hood	1	0	1	0
Jack	38	2,618	12	1
McCulloch	2	0	2	0
Mills	1	0	1	0
Montague	30	1,455	10	0
Palo Pinto	26	296	10	3
Parker	1	0	1	0
San Saba	1	0	1	0
Shackelford	91	1,276	61	1
Stephens	35	3,424½	11	12
Tarrant	1	0	1	0
Throckmorton	16	0	14	2
Wichita	129	4,744½	48	0
Wilbarger	127	11,356	37	0
Young	437	52,156	224	1
Total	1,728	96,121	905	73
Total first 6 months, 1929	1,931	75,342	953	79
Difference	203	20,779	48	6

COMPLETIONS BY MONTH

Month—	Comp.	Prod.	Dry	Gas
January	265	12,218½	127	9
February	200	6,742	106	6
March	331	14,638½	179	13
April	291	33,894	156	9
May	334	15,739	166	17
June	307	12,889	171	14
Total	1,728	96,121	905	73

New York Gasoline Exports Decrease

Loss More Than Offset by Gain in Gulf Coast and Other Areas First Six Months. Foreign Conditions Changing

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, July 28.—Substantial declines in export volume on refined products were registered in the local market during the first six months of 1930, and the outlook for the closing half of the year, although slightly more optimistic, does not indicate that 1930 full year export totals will be equal to those for 1929. The drop in export movement at New York reflects both a lessened foreign demand for American oil products, due to increasing competition from other refining countries, and more particularly a loss of some volume to other Atlantic ports, the Gulf, and the California market.

The trend in export volume from New York is made clear by the following comparative table of exports of principal refined products for the first six months of 1930 and the corresponding period in 1929:

	Gallons — First six months	
	1930	1929
Gasoline	9,278,000	13,532,950
Naphtha	22,065,000	32,513,400
Kerosene	4,690,000	10,442,600
Fuel oil	2,144,000	2,062,400
Petroleum, refined	35,128,000	43,617,400

It will be seen from the foregoing table that sharp drops in export shipments were registered on all products, with the single exception of fuel oil, which showed a slight increase. Gasoline, naphtha, kerosene and oils classed as "petroleum, refined," in export manifests, all registered material declines for the period.

Decrease Progressive

The decrease in local exports was progressive, losses being shown on export movement of most products for both the first and second quarters of the year.

Exports of principal refined petroleum products from New York, by quarters, for the first half of 1930 compare with exports for the comparable quarters in 1929 as follows:

	Gallons — First quarter		Second quarter	
	1930	1929	1930	1929
Gasoline	5,169,000	7,790,150	4,109,000	5,742,800
Naphtha	14,732,000	16,087,500	7,333,000	16,425,900
Kerosene	2,252,000	6,466,300	2,438,000	3,970,300
Fuel oil	672,000	492,000	1,472,000	1,570,400
Lubricating oil	24,107,500	27,864,400	21,286,000	23,111,600
Petroleum, refined	20,120,000	21,784,000	15,008,000	21,833,400
	Pounds			
Petrolatum	609,000	273,900	482,000	209,000
Lubricating grease	15,008,000	16,405,100	12,447,000	14,435,000
Paraffin wax	19,318,000	21,818,700	13,458,000	14,835,900
Scale	8,452,000	8,225,100	8,054,000	3,174,500
Refined	4,552,000	68,700	2,142,000	1,394,200

A number of unfavorable developments beset the local export trade during the first half of 1930, all of which had their effect upon falling volume of export trade in refined products from New York. Of prime importance among these reactionary developments may be classed the decrease in foreign consumption, due to unfavorable economic conditions in Europe; steadily increasing competition of South American, Russian, Rumanian and Persian oils with American petroleum; rapid development of California's export trade in refined products; normal diversification of export business at other Atlantic ports; and the functioning of the export association, which established the basic American export quotation on gasoline and kerosene at the Gulf, and the operation of which centered export sales to a considerable extent at Gulf ports.

Pick-Up Expected

Reports from Europe indicate that economic conditions are on the mend, and a corresponding pick-up in petroleum consumption figures is anticipated. The United States will share in this increasing consumption, and it is upon this belief that operators are basing their predictions for a larger volume during the closing half of the year. Competition of refined products produced in other countries will continue to grow keener, it is felt, but American interests are well entrenched abroad through ownership of foreign marketing subsidiaries and substantial contracts for refined products with large distributing organizations in other countries. There is, of course, always the possibility that retaliatory tariff action against American products as a result of our new tariff law, may develop in some foreign countries, in which event sales of American refined petroleum products might be adversely affected. Barring tariff action of this kind by the principal consuming countries, however, the outlook remains optimistic.

Growing Competition

Increasing competition of other oils, however, brings to the front a problem of serious concern to the American oil industry. Russian competition, steadily growing, is a known factor. South American competition, likewise growing, is not so well known. Rumanian competition, a negligible factor in former years, is becoming more important as continued overproduction in Rumania, and the need for additional capital throws considerable quantities of Rumanian gasoline, kerosene and other refined products on the European market at price levels which insure drastic competition with American oils.

California competition with the Atlantic Seaboard refining industry is growing right along, and no relief from this situation appears in sight. California has topheavy supplies of gasoline to market and in addition enjoys an advantage over eastern gasolines in some countries abroad where the natural antiknock qualities of some California gasolines have brought into favor all motor fuels produced in the Golden State. This competition, however, has its brighter side, as heavier exports of California gasoline lessen the burden of absorbing surplus California stocks in eastern consuming centers.

Steady growth of the refining industry in other parts of the East Coast area has resulted in the diverting of some business which in previous years was handled at New York to other Atlantic ports. This tendency, likewise, is expected to develop further, and will have its effect on curtailed export movement from the local harbor.

Gulf Shipments Gain

Operation of the export association has tended to make the Gulf the principal shipping center for refined products, and, while this has not affected the aggregate business of the principal companies operating in the New York Harbor area (most of whom have refineries or refining subsidiaries in territory adjacent to the Gulf Coast), it has been a factor in curtailing local export movement.

While conditions in principal foreign consuming countries were known to be unfavorable during the first quarter of the year, it was generally felt here that foreign purchases of refined products in the New York market were abnormally small, even taking into consideration the unsatisfactory economic conditions prevailing in many European countries. Apparently well-authenticated reports from abroad indicated that foreign distributors were permitting their stocks to run down to unusually low levels, and that heavier buying might be looked for during the second quarter. The second quarter, however, witnessed a general softening in the price structure of American oils, aside from gasoline and fuel oil, and the expected heavier European and other foreign demand failed to materialize. Current reports have it that export buyers are holding off pending price stabilization, and that the cumulative deferred buying of the first two quarters may reasonably be looked for during the quarter just getting under way.

One of the features of the first six months of 1930 was the placing of a substantial term contract for Russian oils by Standard Oil Co. of New York, and reports of a pending substantial widening of foreign operations by the Standard of New York-Vacuum affiliations, now in process of formation.

Another important development was the acquisition of Anglo-American Oil Co. by Standard Oil Co. of New Jersey, which hitherto had been the principal supplier of refined products distributed throughout Great Britain by Anglo-American.

A number of other American companies strengthened their marketing position in foreign consuming countries during the half year.

Competitive Conditions

While there was a slight price-cutting flurry between Standard Oil Co. of New York and Royal Dutch-Shell in East Indian markets during the first six months of the year, competitive conditions in world markets for the period were the most orderly for several years past. A growing realization of the need for world harmony and co-operation in effecting and maintaining world petroleum stabilizations is discernible on the part of the oil industry leaders of the world, and indications are that all of the principal interests will work more closely along co-operative lines in the future.

WEEKLY SUMMARY OF EXPORTS OF PRINCIPAL REFINED PRODUCTS FROM NEW YORK DURING FIRST SIX MONTHS OF 1930

Week ending—	Gallons — Gasoline	Naphtha	Kerosene	Fuel oil	Lub oil	Pet. ref.	Pounds — Petrolatum	Lub grease	Paraffin wax	Scale	Refined
Jan. 4	430,000	1,395,000	620,000	70,000	1,337,000	830,000	12,000	415,000	360,000	595,000	.....
Jan. 11	130,000	1,130,000	53,000	23,000	1,385,000	2,022,000	196,000	1,075,000	2,215,000	1,085,000	.....
Jan. 18	870,000	1,970,000	315,000	38,000	1,841,500	3,687,000	19,000	1,635,000	1,698,000	1,185,000	197,000
Jan. 25	900,000	825,000	25,000	125,000	3,410,000	1,725,000	.....	1,620,000	2,205,000	812,000	1,300,000
Feb. 1	468,000	975,000	410,000	30,000	2,395,000	831,000	.....	765,000	2,660,000	264,000	831,000
Feb. 8	171,000	625,000	5,000	8,000	1,305,000	1,575,000	46,000	945,000	956,000	520,000	970,000
Feb. 15	450,000	710,000	6,000	8,000	2,615,000	855,000	30,000	660,000	366,000	117,000	459,000
Feb. 22	77,000	3,650,000	730,000	300,000	680,000	415,000	21,000	554,000	1,650,000	488,000	18,000
Mar. 1	280,000	1,665,000	127,000	35,000	1,272,000	3,015,000	184,000	875,000	2,040,000	1,435,000	560,000
Mar. 8	255,000	.....	12,000	6,000	960,000	1,590,000	54,000	1,340,000	2,068,000	241,000	180,000
Mar. 15	325,000	710,000	125,000	.....	2,790,000	1,920,000	.....	1,598,000	730,000	630,000	12,000
Mar. 22	470,000	787,000	78,000	13,000	2,485,000	690,000	15,000	2,291,000	1,590,000	395,000	25,000
Mar. 29	443,000	290,000	46,000	16,000	1,632,000	865,000	32,000	1,235,000	780,000	685,000	.....
Apr. 5	795,000	1,521,000	205,000	17,000	2,090,000	2,255,000	159,000	1,775,000	910,000	660,000	.....
Apr. 12	355,000	1,065,000	220,000	55,000	1,416,000	1,425,000	14,000	1,250,000	1,920,000	1,350,000	74,000
Apr. 19	211,000	260,000	153,000	27,000	1,530,000	973,000	66,000	1,022,000	888,000	180,000	10,000
Apr. 26	505,000	3,000	1,200,000	257,000	4,836,000	210,000	.....	316,000	590,000	875,000	.....
May 3	220,000	964,000	50,000	10,000	1,240,000	1,758,000	38,000	1,095,000	1,050,000	1,125,000	845,000
May 10	61,000	847,000	41,000	120,000	1,479,000	1,527,000	59,000	1,045,000	1,588,000	961,000	.....
May 17	180,000	686,000	19,000	485,000	1,219,000	505,000	.....	316,000	590,000	875,000	.....
May 24	440,000	246,000	15,000	10,000	1,240,000	1,204,000	11,000	1,175,000	533,000	406,000	932,000
May 31	322,000	21,000	200,000	72,000	1,153,000	210,000	21,000	850,000	1,153,000	535,000	.....
June 7	50,000	335,000	255,000	130,000	2,100,000	650,000	.....	430,000	640,000	562,000	5,000
June 14	130,000	535,000	33,000	109,000	908,000	2,326,000	35,000	1,603,000	1,611,000	223,000	.....
June 21	590,000	105,000	12,000	10,000	895,000	1,040,000	54,000	725,000	1,065,000	302,000	.....
June 28	250,000	745,000	35,000	180,000	1,180,000	925,000	25,000	845,000	920,000	.....	275,000

WEEKLY SUMMARY OF EXPORTS OF PRINCIPAL REFINED PRODUCTS FROM NEW YORK DURING FIRST SIX MONTHS OF 1929

Jan. 5	410,000	.....	50,100	36,000	353,000	2,514,000	.....	459,000	542,000	43,000	.....
Jan. 12	570,000	.....	272,200	.....	1,246,500	552,000	42,900	1,361,900	668,800	1,104,500	24,000
Jan. 19	770,000	1,547,000	1,285,000	25,000	2,645,500	1,330,000	.....	1,003,000	3,789,000	311,000	.....
Jan. 26	850,000	2,629,000	440,000	4,000	2,985,000	1,330,000	53,000	2,629,000	1,623,000	1,444,000	.....
Feb. 2	706,000	2,071,000	158,000	23,000	4,155,000	3,460,000	91,000	1,648,000	1,847,000	497,000	40,000
Feb. 9	1,150,000	630,000	509,000	13,500	1,788,700	1,635,000	23,000	1,275,000	389,000	.....	.....
Feb. 16	608,000	1,498,300	266,500	2,000	1,096,700	1,950,000	.....	1,283,900	633,700	356,000	4,700
Feb. 23	713,650	3,534,500	2,321,900	20,000	2,120,200	1,680,100	.....	1,556,400	2,561,800	1,964,200	.....
Mar. 2	435,000	840,000	215,000	84,800	1,500,700	783,000	.....	1,405,000	2,914,800	122,300	.....
Mar. 9	103,800	267,000	102,600	8,700	3,140,600	756,500	.....	760,800	2,927,000	756,000	.....
Mar. 16	745,000	656,800	103,000	7,100	3,867,900	3,255,000	32,000	1,201,500	1,456,500	490,000	.....
Mar. 23	215,000	287,500	48,000	7,000	1,163,500	376,000	32,000	1,003,800	1,458,300	254,500	.....
Mar. 30	513,700	2,125,900	695,000	261,000	2,796,100	2,162,400	.....	817,800	1,007,800	882,600	.....
Apr. 6	854,900	1,833,200	1,253,400	126,900	947,700	2,396,500	.....	651,800	1,498,200	335,000	.....
Apr. 13	60,000	357,600	20,000	166,300	1,555,800	647,900	.....	1,329,800	745,300	776,200	.....
Apr. 20	138,000	1,720,000	83,000	37,500	2,460,000	3,070,400	.....	1,290,600	1,627,500	75,000	226,200
Apr. 27	250,000	160,100	201,300	21,400	1,771,600	798,200	.....	1,040,600	780,000	102,000	115,000
May 4	1,537,200	1,041,900	675,100	20,000	1,649,200	4,286,000	.....	1,150,400	873,700	277,000	.....
May 11	55,000	3,100,000	640,000	26,000	2,045,800	380,000	111,000	1,030,000	1,342,000	222,000	357,000
May 18	150,000	525,000	12,000	263,000	1,160,400	1,160,000	59,000	890,000	1,615,000	360,000	.....
May 25	213,500	857,600	60,000	28,000	2,215,500	2,933,000	29,000	1,442,800	1,883,200	283,000	.....
June 1	394,000	962,500	37,000	20,000	1,782,400	1,742,200	.....	1,763,800	982,000	167,300	.....
June 8	894,000	842,000	403,000	783,000	900,000	1,697,000	10,000	495,000	423,000	314,000	314,000
June 15	310,000	853,000	197,000	3,800	2,148,000	787,000	.....	1,516,000	1,435,000	162,000	.....
June 22	421,000	605,000	388,000	14,000	2,269,000	932,000	.....	1,233,000	817,000	.....	.....
June 29	485,200	3,568,000	40,500	60,500	2,206,400	1,003,200	.....	601,400	814,000	101,000	382,000

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GRAVITY	75-79° API
INITIAL	95-100° F
83%, or more at	212° F
END POINT	350°, or lower
RECOVERY	98%

AND

The storage and handling losses are less than regular U. S. Motor

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New York Gasoline Exports Decrease

Loss More Than Offset by Gain in Gulf Coast and Other Areas First Six Months. Foreign Conditions Changing

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, July 28.—Substantial declines in export volume on refined products were registered in the local market during the first six months of 1930, and the outlook for the closing half of the year, although slightly more optimistic, does not indicate that 1930 full year export totals will be equal to those for 1929. The drop in export movement at New York reflects both a lessened foreign demand for American oil products, due to increasing competition from other refining countries, and more particularly a loss of some volume to other Atlantic ports, the Gulf, and the California market.

The trend in export volume from New York is made clear by the following comparative table of exports of principal refined products for the first six months of 1930 and the corresponding period in 1929:

	Gallons — First six months	
	1930	1929
Gasoline	9,278,000	13,532,950
Naphtha	22,065,000	32,513,400
Kerosene	4,690,000	10,442,600
Fuel oil	2,144,000	2,062,400
Petroleum, refined	35,128,000	43,617,400

It will be seen from the foregoing table that sharp drops in export shipments were registered on all products, with the single exception of fuel oil, which showed a slight increase. Gasoline, naphtha, kerosene and oils classed as "petroleum, refined," in export manifests, all registered material declines for the period.

Decrease Progressive

The decrease in local exports was progressive, losses being shown on export movement of most products for both the first and second quarters of the year.

Exports of principal refined petroleum products from New York, by quarters, for the first half of 1930 compare with exports for the comparable quarters in 1929 as follows:

	Gallons — First quarter		Second quarter	
	1930	1929	1930	1929
Gasoline	5,169,000	7,790,150	4,109,000	5,742,800
Naphtha	14,732,000	16,087,500	7,333,000	16,425,900
Kerosene	2,252,000	6,466,300	2,438,000	3,970,300
Fuel oil	672,000	492,000	1,472,000	1,570,400
Lubricating oil	24,107,500	27,864,400	21,286,000	23,111,600
Petroleum, refined	20,120,000	21,784,000	15,008,000	21,833,400
	Pounds			
Petrolatum	609,000	273,900	482,000	209,000
Lubricating grease	15,008,000	16,405,100	12,447,000	14,435,000
Paraffin wax	19,318,000	21,818,700	13,458,000	14,835,900
Scale	8,452,000	8,225,100	8,054,000	3,174,500
Refined	4,552,000	68,700	2,142,000	1,394,200

A number of unfavorable developments beset the local export trade during the first half of 1930, all of which had their effect upon falling volume of export trade in refined products from New York. Of prime importance among these reactionary developments may be classed the decrease in foreign consumption, due to unfavorable economic conditions in Europe; steadily increasing competition of South American, Russian, Rumanian and Persian oils with American petroleum; rapid development of California's export trade in refined products; normal diversification of export business at other Atlantic ports; and the functioning of the export association, which established the basic American export quotation on gasoline and kerosene at the Gulf, and the operation of which centered export sales to a considerable extent at Gulf ports.

Pick-Up Expected

Reports from Europe indicate that economic conditions are on the mend, and a corresponding pick-up in petroleum consumption figures is anticipated. The United States will share in this increasing consumption, and it is upon this belief that operators are basing their predictions for a larger volume during the closing half of the year. Competition of refined products produced in other countries will continue to grow keener, it is felt, but American interests are well entrenched abroad through ownership of foreign marketing subsidiaries and substantial contracts for refined products with large distributing organizations in other countries. There is, of course, always the possibility that retaliatory tariff action against American products as a result of our new tariff law, may develop in some foreign countries, in which event sales of American refined petroleum products might be adversely affected. Barring tariff action of this kind by the principal consuming countries, however, the outlook remains optimistic.

Growing Competition

Increasing competition of other oils, however, brings to the front a problem of serious concern to the American oil industry. Russian competition, steadily growing, is a known factor. South American competition, likewise growing, is not so well known. Rumanian competition, a negligible factor in former years, is becoming more important as continued overproduction in Rumania, and the need for additional capital throws considerable quantities of Rumanian gasoline, kerosene and other refined products on the European market at price levels which insure drastic competition with American oils.

California competition with the Atlantic Seaboard refining industry is growing right along, and no relief from this situation appears in sight. California has topheavy supplies of gasoline to market and in addition enjoys an advantage over eastern gasolines in some countries abroad where the natural antiknock qualities of some California gasolines have brought into favor all motor fuels produced in the Golden State. This competition, however, has its brighter side, as heavier exports of California gasoline lessen the burden of absorbing surplus California stocks in eastern consuming centers.

Steady growth of the refining industry in other parts of the East Coast area has resulted in the diverting of some business which in previous years was handled at New York to other Atlantic ports. This tendency, likewise, is expected to develop further, and will have its effect on curtailed export movement from the local harbor.

Gulf Shipments Gain

Operation of the export association has tended to make the Gulf the principal shipping center for refined products, and, while this has not affected the aggregate business of the principal companies operating in the New York Harbor area (most of whom have refineries or refining subsidiaries in territory adjacent to the Gulf Coast), it has been a factor in curtailing local export movement.

While conditions in principal foreign consuming countries were known to be unfavorable during the first quarter of the year, it was generally felt here that foreign purchases of refined products in the New York market were abnormally small, even taking into consideration the unsatisfactory economic conditions prevailing in many European countries. Apparently well-authenticated reports from abroad indicated that foreign distributors were permitting their stocks to run down to unusually low levels, and that heavier buying might be looked for during the second quarter. The second quarter, however, witnessed a general softening in the price structure of American oils, aside from gasoline and fuel oil, and the expected heavier European and other foreign demand failed to materialize. Current reports have it that export buyers are holding off pending price stabilization, and that the cumulative deferred buying of the first two quarters may reasonably be looked for during the quarter just getting under way.

One of the features of the first six months of 1930 was the placing of a substantial term contract for Russian oils by Standard Oil Co. of New York, and reports of a pending substantial widening of foreign operations by the Standard of New York-Vacuum affiliations, now in process of formation.

Another important development was the acquisition of Anglo-American Oil Co. by Standard Oil Co. of New Jersey, which hitherto had been the principal supplier of refined products distributed throughout Great Britain by Anglo-American.

A number of other American companies strengthened their marketing position in foreign consuming countries during the half year.

Competitive Conditions

While there was a slight price-cutting flurry between Standard Oil Co. of New York and Royal Dutch-Shell in East Indian markets during the first six months of the year, competitive conditions in world markets for the period were the most orderly for several years past. A growing realization of the need for world harmony and co-operation in effecting and maintaining world petroleum stabilizations is discernible on the part of the oil industry leaders of the world, and indications are that all of the principal interests will work more closely along co-operative lines in the future.

WEEKLY SUMMARY OF EXPORTS OF PRINCIPAL REFINED PRODUCTS FROM NEW YORK DURING FIRST SIX MONTHS OF 1930

Week ending—	Gallons						Pounds				
	Gasoline	Naphtha	Kerosene	Fuel oil	Lub oil	Pet. ref.	Petrolatum	Lub grease	Paraffin wax	Scale	Refined
Jan. 4	430,000	1,395,000	620,000	70,000	1,337,000	830,000	12,000	415,000	360,000	595,000	.....
Jan. 11	130,000	1,130,000	53,000	23,000	1,385,000	2,022,000	196,000	1,075,000	2,215,000	1,085,000	.....
Jan. 18	870,000	1,970,000	315,000	38,000	1,841,500	3,687,000	19,000	1,635,000	1,698,000	1,185,000	197,000
Jan. 25	900,000	825,000	25,000	125,000	3,410,000	1,725,000	.....	1,620,000	2,205,000	812,000	1,300,000
Feb. 1	468,000	975,000	410,000	30,000	2,395,000	831,000	.....	765,000	2,660,000	264,000	831,000
Feb. 8	171,000	625,000	5,000	8,000	1,305,000	1,575,000	46,000	945,000	956,000	520,000	970,000
Feb. 15	450,000	710,000	6,000	8,000	2,615,000	855,000	30,000	660,000	366,000	117,000	459,000
Feb. 22	77,000	3,650,000	730,000	300,000	680,000	415,000	21,000	554,000	1,650,000	488,000	18,000
Mar. 1	280,000	1,665,000	127,000	35,000	1,272,000	3,015,000	184,000	875,000	2,040,000	1,435,000	560,000
Mar. 8	255,000	.....	12,000	6,000	960,000	1,590,000	54,000	1,340,000	2,068,000	241,000	180,000
Mar. 15	325,000	710,000	125,000	.....	2,790,000	1,920,000	.....	1,598,000	730,000	630,000	12,000
Mar. 22	470,000	787,000	78,000	13,000	2,485,000	690,000	15,000	2,291,000	1,590,000	395,000	26,000
Mar. 29	443,000	290,000	46,000	16,000	1,632,000	865,000	32,000	1,235,000	780,000	685,000	.....
Apr. 5	795,000	1,521,000	205,000	17,000	2,090,000	2,255,000	159,000	1,775,000	910,000	660,000	.....
Apr. 12	355,000	1,065,000	220,000	55,000	1,416,000	1,425,000	14,000	1,250,000	1,920,000	1,350,000	74,000
Apr. 19	211,000	260,000	153,000	27,000	1,530,000	973,000	66,000	1,022,000	888,000	180,000	10,000
Apr. 26	505,000	3,000	1,200,000	257,000	4,836,000	210,000	.....	316,000	590,000	875,000	.....
May 3	220,000	964,000	50,000	10,000	1,240,000	1,758,000	38,000	1,095,000	1,050,000	1,125,000	846,000
May 10	61,000	847,000	41,000	120,000	1,479,000	1,527,000	59,000	1,045,000	1,588,000	961,000	.....
May 17	180,000	686,000	19,000	485,000	1,219,000	505,000	.....	316,000	590,000	875,000	.....
May 24	440,000	246,000	15,000	10,000	1,240,000	1,204,000	11,000	1,175,000	533,000	406,000	932,000
May 31	322,000	21,000	200,000	72,000	1,153,000	210,000	21,000	850,000	1,153,000	535,000	.....
June 7	50,000	335,000	255,000	130,000	2,100,000	650,000	.....	430,000	640,000	562,000	5,000
June 14	130,000	535,000	33,000	109,000	908,000	2,326,000	35,000	1,603,000	1,611,000	223,000	.....
June 21	590,000	105,000	12,000	10,000	895,000	1,040,000	54,000	725,000	1,065,000	302,000	.....
June 28	250,000	745,000	35,000	180,000	1,180,000	925,000	25,000	845,000	920,000	.....	275,000

WEEKLY SUMMARY OF EXPORTS OF PRINCIPAL REFINED PRODUCTS FROM NEW YORK DURING FIRST SIX MONTHS OF 1929

Week ending—	Gallons						Pounds				
	Gasoline	Naphtha	Kerosene	Fuel oil	Lub oil	Pet. ref.	Petrolatum	Lub grease	Paraffin wax	Scale	Refined
Jan. 5	410,000	.....	50,100	36,000	353,000	2,514,000	.....	459,000	542,000	43,000	.....
Jan. 12	570,000	.....	272,200	.....	1,246,500	552,000	42,900	1,361,900	668,800	1,104,500	24,000
Jan. 19	770,000	1,547,000	1,285,000	25,000	2,645,500	1,330,000	.....	1,003,000	3,789,000	311,000	.....
Jan. 26	850,000	2,629,000	440,000	4,000	2,985,000	1,330,000	53,000	2,629,000	1,623,000	1,444,000	.....
Feb. 2	706,000	2,071,000	158,000	23,000	4,155,000	3,460,000	91,000	1,648,000	1,847,000	497,000	40,000
Feb. 9	1,150,000	630,000	509,000	13,500	1,788,700	1,635,000	23,000	1,275,000	389,000	.....	.....
Feb. 16	608,000	1,498,800	266,500	2,000	1,096,700	1,950,000	.....	1,283,900	633,700	356,000	4,700
Feb. 23	713,650	3,534,500	2,321,900	20,000	2,120,200	1,680,100	.....	1,556,400	2,561,800	1,964,200	.....
Mar. 2	435,000	840,000	215,000	84,800	1,500,700	783,000	.....	1,405,000	2,914,800	122,300	.....
Mar. 9	103,800	267,000	102,600	8,700	3,140,600	756,500	.....	760,800	2,927,000	756,000	.....
Mar. 16	745,000	656,800	103,000	7,100	3,867,900	3,255,000	32,000	1,201,500	1,456,500	490,000	.....
Mar. 23	215,000	287,500	48,000	7,000	1,163,500	376,000	32,000	1,003,800	1,458,300	254,500	.....
Mar. 30	513,700	2,125,900	695,000	261,000	2,796,100	2,162,400	.....	817,800	1,007,800	882,600	.....
Apr. 6	854,900	1,833,200	1,253,400	126,900	947,700	2,396,500	.....	651,800	1,498,200	335,000	.....
Apr. 13	60,000	357,600	20,000	166,300	1,555,800	647,900	.....	1,329,800	745,300	776,200	.....
Apr. 20	138,000	1,720,000	83,000	37,500	2,460,000	3,070,400	.....	1,290,600	1,627,500	75,000	226,200
Apr. 27	250,000	160,100	201,300	21,400	1,771,600	798,200	.....	1,040,600	780,000	102,000	115,000
May 4	1,537,200	1,041,900	675,100	20,000	1,649,200	4,286,000	.....	1,150,400	873,700	277,000	.....
May 11	55,000	3,100,000	640,000	26,000	2,045,800	380,000	111,000	1,030,000	1,342,000	222,000	357,000
May 18	150,000	525,000	12,000	263,000	1,160,400	1,160,000	59,000	890,000	1,615,000	360,000	.....
May 25	213,500	857,600	60,000	28,000	2,215,500	2,933,000	29,000	1,442,800	1,883,200	283,000	.....
June 1	394,000	962,500	37,000	20,000	1,782,400	1,742,200	.....	1,763,800	982,000	167,300	.....
June 8	894,000	842,000	403,000	783,000	900,000	1,697,000	10,000	495,000	423,000	314,000	314,000
June 15	310,000	853,000	197,000	3,800	2,148,000	787,000	.....	1,516,000	1,435,000	162,000	.....
June 22	421,000	605,000	388,000	14,000	2,269,000	932,000	.....	1,233,000	817,000	.....	.....
June 29	485,200	3,568,000	40,500	60,500	2,206,400	1,003,200	.....	601,400	814,000	101,000	382,000

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Bartlesville, Okla.

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Large Increase in Gasoline Imports

Shipments From South American Refineries First Six Months Show Gain of 140 Per Cent. Crude Imports Less

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, July 28.—Increasing imports of refined petroleum products during first six months of the year have tended to center the attention of the industry on the growing refinery facilities in the Caribbean area and the probability that increasing quantities of South American petroleum will reach American markets in the form of refined products, rather than as crude oil to be refined here.

Gasoline import movement has shown an especially sharp increase in the first six months of 1930, registering a gain of 140 per cent over the comparable period of 1929, while gas and fuel oils have also registered a substantial increase, amounting to approximately 70 per cent. Imports of refined products for the first six months of the year, with comparison for the comparable months of 1929, follow:

Product—	First six months 1930 (gals.)	First six months 1929 (gals.)	Per cent change
Gasoline	8,488,000	3,515,000	+140
Kerosene	65,000	105,000	— 38
Gas and fuel oil	12,560,000	7,368,000	+ 70
Paraffin wax	*17,957,000	15,765,000	+ 13

*Pounds.

Gasoline imports have been coming in mainly at Atlantic Coast ports during the period, although some shipments have been received at the Gulf. Shell and Pan American are the principal importers of gasoline, the former from their refineries at Curacao and Aruba, Dutch West Indies, and the latter from its new refinery at Aruba. Both companies have distributing facilities in the United States ample to absorb the production of their Dutch West Indies refineries, it is stated, but the influence of these shipments is felt through the fact that this motor fuel goes to fill consumptive requirements formerly taken care of by domestic motor fuel production. The current steady increase in motor fuel imports, it is evident, does not reflect a temporary condition, but is rather the beginning of what is destined to become a steadily increasing movement of gasoline from other producing countries into the United States.

While the two large companies named are bringing in most of the gasoline imported from South America, it is believed that the next few years will witness the advent of other companies into the refining industry in the Caribbean area, foreshadowing continued growing competition with gasoline produced in the United States, not only in world markets, but in domestic marketing circles as well.

Offset by Refined Imports

Principal operators in the South American fields have decreased their shipments of crude petroleum to the United States, but the drop in imports of crude has been more than offset by the gains in receipts of the refined products.

Gas and fuel oil imports, which totaled 12,560,000 bbls. for the first half of the year, promise to show a continued growth as steady and almost as spectacular as the sharp increase in gasoline imports. South American fuel and gas oil imports, likewise, are principally at East Coast ports, although some quantities have come in through the Gulf.

Imports of paraffin wax in the first half of 1930, while larger than those for the comparable months of 1929, were nevertheless negligible in comparison with domestic production and consumption of this product.

The importance of gasoline imports in domestic markets is illustrated by the following table of the rise and fall in the supply of gasoline, produced and imported, for the first five months of the current year, with comparison with the three preceding years. This table was prepared especially for the consideration of directors of the American Petroleum Institute, who met recently and discussed current overproduction shown in Table 1.

Interests closely identified with the South American producers early this year stated that gasoline imports for the year 1930 probably would not exceed 15,000,000 bbls. With close to 8,500,000 bbls. brought in during the first half of the year, and the season of heaviest consumption yet to be accounted for, indications are that this total will be substantially exceeded.

Imports of principal refined petroleum products for the first six months of 1930, with comparison for the comparable months of 1929, shown in Table 2.

SHIPMENTS OF CALIFORNIA TO EAST COAST DECLINE FIRST HALF OF 1930

By A. E. Mockler

NEW YORK, July 28.—California gasoline receipts at East Coast ports fell off a little from 1929 totals during the first half of the current year, although arrivals of the Pacific Coast motor fuel were still substantially in excess of those for 1928. For the first time in several years, California in the first six months of 1930 lost its role of "price maker" for gasoline in East Coast markets, and shipments of the Pacific Coast product took their place in the regular movement of gasoline into consuming channels on a par with eastern and Gulf-made gasolines.

There were two factors primarily responsible for the falling-off in movement of California gasoline eastward, both, perhaps, of equal importance. The first reason was the steady increase in receipts of South American gasoline, which is taking California's place as the "interloper," now that the Pacific Coast product is established here. The second reason is the further integration of operations on the part of California gasoline handlers, resulting in the establishment of "regular" outlets for the Pacific Coast motor fuel and the regulation of shipments in conformity with this demand.

Although California gasoline at times during the first quarter of the year was available for shipment East at what might be termed distressed prices, the scarcity of clean tankers and the high rates for intercoastal movement together combined to hold distressed California gasoline off the open market in the East. Another factor which doubtless contributed largely to the withholding of distressed California gasolines from eastern markets was the action of Standard Oil Co. of California in posting a "shipside" price at California ports at which level it offered to take all distressed gasoline offering. The price offered by the California company was sufficiently high to absorb all gasolines which might otherwise have been thrown on the open market here.

Overproduction Continues

Overproduction of California gasoline has continued, however, and the stocks on the Pacific Coast are still topheavy. A comparison of California gasoline holdings for the first six months of 1930, as contrasted with holdings on the comparable dates in 1929, follows:

CALIFORNIA GASOLINE STOCKS

	Barrels 1929	Barrels 1930
January 1	8,921,000	14,785,000
February 1	10,134,000	15,909,000
March 1	10,186,000	16,269,000
April 1	11,293,000	15,978,000
May 1	12,023,000	15,885,000
June 1	11,839,000	15,850,000

Thus, on June 1 this year, California refinery stocks showed an increase of 1,065,000 bbls., or 7.20 per cent, over holdings at the start of the year. Notwithstanding the heavy stocks held on June 1, however, the situation reflected a definite effort on the part of California refiners to cut down when it is considered that during the first six months last year gasoline holdings in California increased 2,918,000 bbls., or 32.67 per cent. With Pacific Coast refiners expected to join in the movement to restrict refinery operations until surplus stocks are down to

(Table Continued on Next Page)

TABLE 1—RISE AND FALL IN THE SUPPLY OF GASOLINE (PRODUCED AND IMPORTED) FOR FIRST FIVE MONTHS OF 1927, 1928, 1929 AND 1930

(Barrels of 42 U. S. gallons)

	1927 Production (1)	1927 Imports (2)	1927 Total (3)	1928 Production (4)	1928 Imports (5)	1928 Total (6)	1929 Production (7)	1929 Imports (8)	1929 Total (9)	1930 Production (10)	1930 Imports (11)	1930 Total (12)
December—												
Total	.....	.....	.....	28,619,000	282,000	28,901,000	33,934,000	320,000	34,254,000	37,133,000	716,000	37,849,000
Daily average	.....	.....	.....	923,190	9,100	932,200	1,094,600	10,300	1,104,900	1,197,800	23,100	1,220,900
January—												
Total	27,399,000	520,000	28,419,000	27,962,000	562,000	28,524,000	34,335,000	499,000	34,834,000	36,133,000	1,079,000	37,212,000
Daily average	900,000	16,800	916,800	902,000	18,100	920,100	1,107,600	16,100	1,123,700	1,165,600	34,800	1,200,400
Increase or decrease over previous year	.....	.....	.....	+0.22	+ 7.74	+0.36	+22.79	—11.05	+22.13	+5.24	+116.15	+6.83
Increase or decrease over previous month	.....	.....	.....	—2.29	+98.91	—1.30	+ 1.19	+56.32	+ 1.70	—2.69	+ 50.65	—1.68
February—												
Total	25,011,000	416,000	25,427,000	26,762,000	373,000	27,135,000	31,264,000	406,000	31,670,000	33,500,000	953,000	34,453,000
Daily average	893,200	14,900	908,100	922,800	12,900	935,700	1,116,600	14,500	1,131,100	1,196,400	34,000	1,230,400
Increase or decrease over previous year	.....	.....	.....	+3.31	+13.42	+3.04	+21.00	+12.41	+20.88	+7.15	+134.48	+8.73
Increase or decrease over previous month	—0.75	—11.31	—0.95	+2.31	—28.73	+1.70	+ 0.81	— 9.38	+ 0.66	+2.64	— 2.30	+2.50
March—												
Total	27,849,000	493,000	28,342,000	29,311,000	259,000	29,570,000	34,467,000	327,000	34,794,000	37,190,000	1,369,000	38,559,000
Daily average	898,400	15,900	914,300	945,500	8,400	953,900	1,111,800	10,600	1,122,400	1,199,700	44,200	1,243,900
Increase or decrease over previous year	.....	.....	.....	+5.24	—47.17	+4.33	+17.59	+26.20	+17.66	+7.91	+316.98	+10.83
Increase or decrease over previous month	+0.58	+6.71	+0.69	+3.46	—34.88	+1.95	— 0.43	—26.90	— 0.77	+0.28	+ 30.00	+ 1.10
April—												
Total	26,565,000	377,000	26,942,000	29,300,000	472,000	29,772,000	34,636,000	822,000	35,458,000	37,679,000	1,319,000	38,998,000
Daily average	885,500	12,600	898,100	976,700	15,700	992,400	1,154,500	27,400	1,181,900	1,256,000	44,000	1,300,000
Increase or decrease over previous year	.....	.....	.....	+10.30	+24.61	+10.50	+18.20	+ 74.52	+19.10	+8.79	+60.58	+9.99
Increase or decrease over previous month	—1.44	—20.75	—1.77	+ 3.30	+86.91	+ 4.04	+ 3.84	+158.49	+ 5.30	+4.69	— 0.45	+4.51
May—												
Total	26,780,000	490,000	27,270,000	30,837,000	368,000	31,205,000	36,270,000	729,000	36,999,000	39,000,000	1,768,000	40,768,000
Daily average	863,900	15,800	879,700	994,700	11,900	1,006,600	1,170,000	23,500	1,193,500	1,258,100	57,000	1,315,100
Increase or decrease over previous year	.....	.....	.....	+15.14	—24.68	+14.43	+17.62	+97.48	+18.57	+7.53	+142.53	+10.19
Increase or decrease over previous month	—2.44	+25.40	—2.05	+ 1.84	—34.30	+ 1.43	+ 1.34	—14.23	+ 0.98	+0.17	+ 29.55	+ 1.16
First five months, January-May—												
Total	134,104,000	2,296,000	136,400,000	144,172,000	2,034,000	146,206,000	170,972,000	2,783,000	173,755,000	183,502,000	6,488,000	189,990,000
Daily average	888,100	15,200	903,300	948,500	13,400	961,900	1,132,300	18,400	1,150,700	1,215,200	43,000	1,258,200
Increase or decrease over previous year	.....	.....	.....	+6.30	—11.84	+6.49	+19.38	+37.31	+9.23	+7.32	+133.70	+9.34

Note—Figures for April, 1930, and prior are from Bureau of Mines. May, 1930, has been estimated.

TABLE 2

Barrels of 42 U.S. gallons

	January 1930	January 1929	February 1930	February 1929	March 1930	March 1929	April 1930	April 1929	May 1930	May 1929	†June 1930	June 1929
Gasoline	1,079,000	499,000	953,000	406,000	1,369,000	327,000	1,319,000	822,000	1,768,000	729,000	2,000,000	732,000
Kerosene	.....	38,000	.....	20,000	.....	5,000	.....	21,000	6,000	6,000	6,000	15,000
Gas and fuel oil	2,652,000	335,000	2,257,000	466,000	2,254,000	1,146,000	1,837,000	1,778,000	1,810,000	1,983,000	1,750,000	1,660,000
Paraffin*	2,220,000	2,982,000	2,151,000	3,120,000	2,080,000	2,575,000	4,280,000	2,680,000	3,726,000	2,748,000	3,500,000	3,070,000

*Pounds. †June, 1930, estimated.

MILLION NET TONS OF LINE PIPE WAS ORDERED IN FIRST HALF 1930

By B. E. V. Luty

Nearly if not quite 1,000,000 net tons of line pipe were ordered in the first half of 1930, yet during January and February there had been practically no buying, current reports being simply that there were many projects, likely to come to a head. Production during the half year was only a small fraction of 1,000,000 tons, producers having a large volume of business on books July 1.

Unfortunately there are no statistics of line pipe production in the past. Production of the regular pipe mills is reported, but line pipe is included with oil country goods generally, and the electrically welded pipe of the A. O. Smith Corp. is not included at all in the official statistics of the steel industry, which are gathered by the American Iron and Steel Institute.

Very roughly the writer estimates that production of line pipe in 1928 was not far from 1,000,000 net tons, and in 1929 not far from 1,500,000 net tons. The second half of this year is entered with all capacity capable of making 10-inch and larger, by the old fire welding process, by electric welding and by the seamless process, fully engaged and well booked, with prospects that additional orders will be placed to engage capacity through the year, whereby it may be estimated that despite light production in the first quarter of the year there will be a total production in the year of more than 1,500,000 net tons. Line pipe for natural gas generally runs a little over 200 net tons per mile in 24-inch and a little less than 200 net tons in 22-inch.

Some Large Orders

The two largest lines for which pipe was ordered in the half year were those of the Missouri-Kansas Pipe Line Co., totaling some 1,250 miles of various sizes up to 24-inch, and the Cities Service line, close to 1,000 miles of 24-inch.

The Missouri-Kansas Pipe Line Co.'s gas line runs from the Texas Panhandle to Indianapolis, Ind., touching Kansas City, Mo., Decatur, Ill., and Terre Haute, Ind., and connecting with the company's Kentucky system. It includes 350 miles of 24-inch, 325 miles of 22-inch and a large mileage in smaller sizes, the entire business going to National Tube Co. and amounting to more than 150,000 net tons.

The Cities Service Co. order was divided between National Tube Co., and the A. O. Smith Corp., in approximately equal proportions. This represents a combination of rival interests that were planning gas lines from Texas to Chicago. The agreement reached involved laying what may be called a duplex line, two 24-inch lines over the same right of way, one to be laid this year, the other next year. The parties in interest are Standard Oil of New Jersey, Phillips Petroleum, Skelly Oil, The Texas Company and Columbia Carbon, with Cities Service to lay the line.

Another large project, on which satisfactory details have been lacking, is a gas line on which work was to be started July 1, Columbia Gas & Electric Corp. to lay a gas line from southern West Virginia, near the Kentucky and Virginia borders, to Philadelphia, gas to be delivered by January 1.

The Montana-Dakota Power & Light Co. ordered 281 miles for a line through the States indicated, the Moody Seagraves system 600 miles and the Pure Oil Co. 190 miles, all these being for natural gas.

There were various other orders for natural gas lines, of smaller size. While natural gas lines furnished the chief tonnage there were some important oil and gasoline lines. The largest oil line was 700 miles of 10-inch, a line of the Union Gulf Corp. to refineries built or to be built at Pittsburgh, Cleveland and elsewhere.

Gasoline lines have quite suddenly come into vogue and no adequate summary can be made of projects that have come to a head and others about to result in orders. Apparently the longest line reported is a 700-mile line, 8-inch, of the Phillips Petroleum Co.

Development of Processes

This year is rich in development of new processes for making large diameter line pipe. It will pass into history as an eventful year. Prior to 1927 all pipe was made by the old and familiar fire welding method, butt-weld, or 3-inch and smaller, by the butt-weld process involving one operation, and lapweld, for 2-inch and up, by the lapweld process, involving two operations, the bending of the skelp and then the welding being separate.

Thus 1930 has witnessed almost a doubling in the diameter of seamless tubing produced and is about to witness the starting of two additional electric welding plants.

CALIFORNIA SHIPMENTS TO EAST COAST DECLINE

(Continued from Page 232)

a working level, the outlook is more optimistic in California.

California is not yet removed as a menace to eastern gasoline markets, however, notwithstanding the success which has thus far in the year attended the efforts to regulate shipments East to consuming requirements in East Coast markets. Stocks on hand at California refineries at the close of April were still out of all proportion to holdings in other important refinery areas of the United States. A comparison of the holdings of gasoline in California on June 28 with stocks on hand at other refining centers on the same date follows:

	Bbls.
East Coast	8,163,000
Appalachian	1,638,000
Indiana, Illinois, Kentucky	8,067,000
Oklahoma, Kansas, Missouri	4,609,000
Texas	6,802,000
Louisiana-Arkansas	2,467,000
Rocky Mountain	2,704,000
California	15,250,000
Total	49,700,000

California stocks, as indicated by the above compilation, comprise more than 30 per cent of the stocks of the entire United States and almost equal the combined holdings of all refineries in the Mid-Continent, Texas, Louisiana and Arkansas refining areas.

Present movement of California eastward is being handled largely by Standard Oil Co. of New York, Richfield Oil, The Texas Company, Tide Water Associated, Sun Oil, Cities Service, Atlantic Refining and an occasional shipment to Shell Eastern.

Scarcity of Tankers

During the early part of the year it became evident that there would be an acute scarcity of clean tankers for moving California gasoline to eastern markets. A number of independent tankers which formerly operated in the intercoastal movement under charter were purchased by the larger companies with regular movement in this service, and the resultant jump in rates in the open market, and difficulty experienced in making fixtures, was quite a factor in restricting open market movement of California gasoline to the East.

During the greater part of the period under review, California gasolines sold on a parity with eastern motor fuel in the tank car and tank wagon markets in the East, but from time to time handlers of the Pacific Coast product, particularly gasolines coming from favored fields in California, commanded a premium of from one-quarter to 1 cent per gallon, based on the antiknock qualities of the fuel in question.

California Shipments

The following table shows the movement of principal refined products from California to Gulf and East Coast ports (mainly the latter) for the first two quarters of 1930, with comparisons with figures covering the corresponding quarters in 1929 and 1928:

	Barrels					
	First quarter			Second quarter		
	1930	1929	1928	1930	1929	1928
Gasoline	4,698,000	4,317,000	2,397,000	4,091,000	4,700,000	4,314,000
Gas oil	534,000	501,000	459,000	442,000	153,000	377,000
Fuel oil	428,000	.....	63,000	411,000	50,000	105,000

A total of 125,000 bbls. of kerosene and 205,000 bbls. of kerosene distillate were received from California during the first half of 1930, comparing with receipts of 625,000 bbls. of these two oils during the first six months last year.

A total of 98,000 bbls. of California lubricating oils was received during the half year, contrasting with 138,000 bbls. for the full year 1929 and 264,000 bbls. for all 1928.

Fuel and Gas Oils

While shipments of California gasoline fell off for the first six months of the year, receipts of gas and fuel oils from the Pacific Coast showed a considerable increase during the period. A total of 839,000 bbls. of California fuel oil was received in the East during the first half of the year, against only 50,000 bbls. in the first six months of 1929, while shipments of gas oil increased from 659,000 bbls. in the first six months last year to 976,000 bbls. in the comparable period of 1930.

These shipments, however, were handled through regular trade channels, and did not present the disturbance to spot markets experienced in former years, when Pacific Coast gas and fuel oils, particularly the latter, were sold in the East "at a price," resulting in breaks in price schedules in the East Coast area.

Barring any unforeseen developments, such as price wars involving the large handlers of California refined products, the outlook for the second half of 1930 favors a continued orderly movement of these products to the eastern seaboard, with no disturbance to the price fabric in the East.

Receipts of California refined products at Atlantic and Gulf Coast ports for the first six months of 1930, with comparison for the comparable months of 1929 and 1928, follow:

FIRST SIX MONTHS 1930

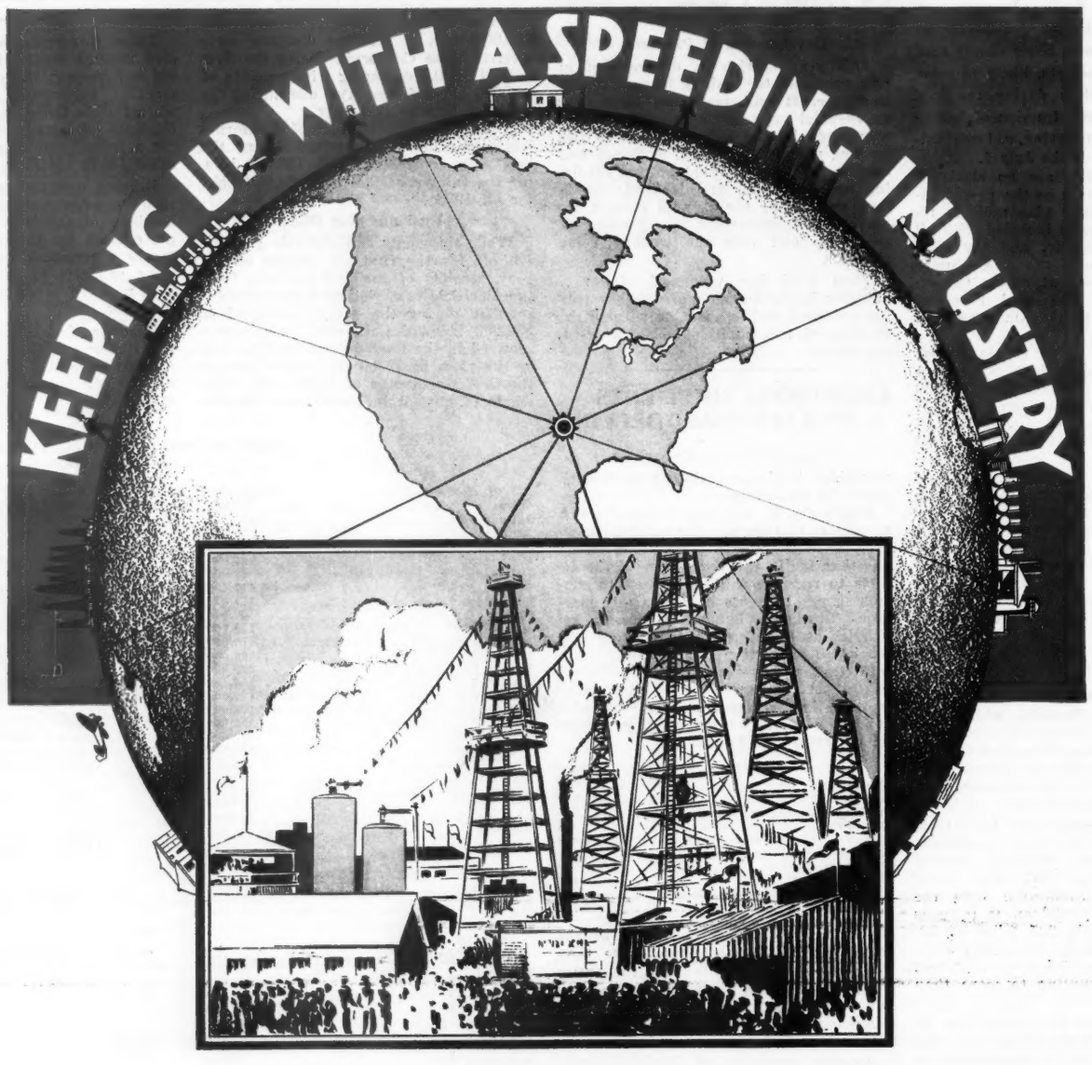
	Barrels					
Week ending—	Gasoline	Kerosene	Gas oil	Fuel oil	Kerosene distillate	Lubricants
January 4	83,000	95,000	78,000	.....	.....	.....
January 11	447,000	.....	.....	.....	95,000	11,000
January 18	575,000	.....	120,000	95,000	25,000	.....
January 25	535,000	.....	130,000	.....	.....	.....
February 1	398,000	.....	.....	.....	.....	.....
February 8	379,000	30,000	.....	70,000	.....	.....
February 15	612,000	.....	.....	.....	.....	.....
February 22	117,000	.....	.....	95,000	.....	.....
March 1	105,000	.....	70,000	.....	.....	.....
March 8	178,000	.....	.....	94,000	50,000	.....
March 15	470,000	.....	74,000	.....	.....	21,000
March 22	360,000	.....	62,000	74,000	15,000	.....
March 29	439,000	.....	.....	.....	20,000	.....
April 5	197,000	.....	.....	146,000	.....	.....
April 12	176,000	.....	78,000	.....	.....	.....
April 19	195,000	.....	.....	.....	.....	.....
April 26	393,000	.....	20,000	.....	.....	29,000
May 3	372,000	.....	50,000	95,000	.....	.....
May 10	263,000	.....	.....	.....	.....	.....
May 17	455,000	.....	62,000	95,000	.....	.....
May 24	387,000	.....	.....	.....	.....	.....
May 31	180,000	.....	.....	.....	.....	.....
June 7	274,000	.....	116,000	.....	.....	.....
June 14	368,000	.....	.....	.....	.....	37,000
June 21	445,000	.....	52,000	.....	.....	.....
June 28	386,000	.....	64,000	75,000	.....	.....

1929

	Barrels				
Week ended—	Gasoline	Gas oil	Fuel oil	Crude	Kerosene and kerosene distillate
January 5	239,000	.....	.....	.....	28,000
January 12	387,000	.....	.....	.....	.....
January 19	418,000	.....	.....	.....	.....
January 26	294,000	.....	.....	.....	96,000
February 2	68,000	.....	.....	332,000	.....
February 9	654,000	77,000	.....	.....	.....
February 16	445,000	172,000	.....	.....	.....
February 23	80,000	.....	.....	.....	80,000
March 2	517,000	96,000	.....	175,000	.....
March 9	287,000	78,000	.....	.....	.....
March 16	225,000	.....	.....	.....	.....
March 23	667,000	.....	.....	.....	.....
March 30	536,000	78,000	.....	58,000	190,000
April 6	242,000	88,000	50,000	75,000	70,000
April 13	172,000	.....	.....	75,000	.....
April 20	355,000	70,000	.....	.....	.....
April 27	408,000	.....	.....	.....	.....
May 4	362,000	.....	.....	.....	80,000
May 11	374,000	.....	.....	.....	.....
May 18	537,000	.....	.....	.....	.....
May 25	414,000	.....	.....	95,000	.....
June 1	312,000	.....	.....	.....	.....
June 8	161,000	.....	.....	96,000	.....
June 15	387,000	.....	.....	.....	81,000
June 22	595,000	.....	.....	.....	.....
June 29	381,000	.....	.....	.....	.....

1928

	Barrels			
Week ended—	Gasoline	Crude oil	Gas oil	Fuel oil
January 7	170,000	.....	.....	.....
January 14	174,000	148,000	.....	68,000
January 21	196,000	333,000	244,000	.....
January 28	231,000	90,000	64,000	.....
February 4	110,000	.....	.....	.....
February 11	256,000	152,000	.....	.....
February 18	223,000	169,000	151,000	.....
February 25	150,000	.....	.....	.....
March 3	228,000	225,000	.....	.....
March 10	263,000	86,000	.....	.....
March 17	158,000	.....	.....	.....
March 24	158,000	76,000	.....	.....
March 31	80,000	90,000	.....	.....
April 7	465,000	.....	.....	.....
April 14	153,000	59,000	60,000	.....
April 21	532,000	174,000	.....	.....
April 28	155,000	90,000	.....	.....
May 5	345,000	90,000	165,000	.....
May 12	354,000	169,000	.....	.....
May 19	313,000	.....	76,000	105,000
May 26	238,000	.....	76,000	105,000
June 2	288,000	78,000	.....	.....
June 9	240,000	.....	.....	.....
June 16	338,000	78,000	.....	.....
June 23	419,000	81,000	76,000	.....
June 30	534,000	.....	.....	.....



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GREAT FIELD OPENED IN LEA COUNTY, NEW MEX.

(Continued from Page 143)

and 4,000,000 feet of gas the first 24 hours from a total depth of 4,184 feet. About the same time the Shell Petroleum Corp.'s No. 1 Terry, SE SW NE, Section 22-19-38, 2¾ miles south and a little east of the discovery, found sulphur water at 4,235-38 feet and abandoned the hole. The surface elevation of this well was 3,597 feet, the top of the salt at 1,726 feet, the base at 2,670 feet and the top of the brown lime at 2,939 feet. The Ohio Oil Co.'s No. 1 State, NE SE SW, Section 9-19-38, a mile to the southwest of the discovery, was a small pumper at 4,150-4,208 feet, making 30 bbls. of oil and 12 bbls. of water. The Shell's No. 1 Thorpe, an offset on the north to the Walker well, made 1,131 bbls. initial, and the Midwest's No. 24 State, an offset on the west to the Walker well, made 686 bbls. The Midwest's No. 13 Terry, another of this group of offsets, made 742 bbls. initial. This was about the status of the field on January 1, 1930, with nothing to indicate a major pool and the limits apparently having been found on the south and southwest.

Cut-Off on South

The limit of the pool on the southeast was indicated early in 1930 when the Midwest's No. 6 Wright, NW cor. SW, Section 14-19-38, a little less than a mile southeast of the nearest producer, had sulphur water and was abandoned at 4,500 feet. The situation was undergoing a change, however, as a result of the showing in the Humble Oil & Refining Co.'s No. 1 Bowers, C NE SE, Section 30-18-38, 3 miles to the northwest of the discovery. It spudded on June 10, 1929, at a surface elevation of 3,659 feet. It had 10,000,000 feet of gas a day at 2,772 feet, made 25 bbls. of 42 gravity oil per hour and 6,000,000 feet of gas per day at 3,250 feet, had 50,000,000 feet of gas at 3,684-87 feet, and early in January blew in at 4,106 feet and gauged 9,720 bbls. of oil the first 24 hours. The oil tested 35.4 gravity. Later on, after running a 3-inch tubing, it gauged 2,219 bbls. in a six-hour test, and in May, 1930, when connected with the pipe line and put on production, the minimum production in the first eight days was 7,262 bbls. and the maximum 7,647 bbls. It continues up to this time to average around 7,300 bbls. a day. The top of the salt was found in this well at 1,500 feet, the base at 2,560 feet, and the pay at 4,058-4,106 feet. The elevation is 3,659 feet.

This well disclosed that the pool was much larger than the earlier completions had indicated and the wells farther to the southeast were not on top of the structure. Approximately 4 miles of territory in a northwest-southeast trend had been proven up and the big drilling campaign now in progress was inaugurated. This territory has now been extended another mile to the northwest in the Shell Petroleum Corp.'s No. 1 McKinley, SW cor., Section 19-18-38, which made 10,124 bbls. the first 24 hours, showing that the pool evidently extends much farther in that direction. Practically all the wells drilling are in what is considered proven territory and it probably will be some time before the limits are defined in any direction except in the southeastern part. While the field now has 24 producers capable of making 120,000 bbls. a day if opened up, this figure will be revised upward considerably before this is read and the estimate of 200,000 bbls. a day within a few months is not considered extravagant.

Big Wells in June

Completions in the last two weeks of June include the following:

The Shell's No. 1 State, SE SW NE, Section 32-18-38, midway between the No. 1 Bowers and the producers to the southeast, was completed at 4,175 feet and estimated at 10,000 to 12,000 bbls. a day potential production. Through the 4-inch tubing and casing it made 437 bbls. of fluid the first hour and 408 bbls. the second hour. It was then shut in to the tubing and made 1,686 bbls. in the next 11 hours. The well was making 15 per cent basic sediment and 1 per cent water when it was shut in and 39,000,000 feet of gas per day. The elevation is 3,637 feet, the base of the salt was at 2,495 feet and the top of the brown lime at 2,735 feet. Like all the wells in the gusher territory, it had upper pays which were cased off to go to the big production. At 3,136-44 feet it tested 279 bbls. of 39 gravity oil in 18 hours and large quantities of gas. The Shell's No. 1 McKinley, SW cor., Section 19-18-38, found the pay at 4,005-4,210 feet and is estimated as a 10,000-bbl. well. It produced an average of 8,000 bbls. and 10,500,000 feet of gas on a three-fourths inch choke. The elevation is 3,662 feet, the top of the salt was at 1,580 feet, the base at 2,727 feet and the top of the brown lime at 2,785 feet. This well is the farthest to the northwest of any so far completed. The Ohio Oil Co. and the Independent Oil & Gas Co.'s No. 1 State-Northrup, NE NW SE, Section 32-18-38, was completed as a 7,200-bbl. well at 4,175 feet. The other completions up to this date are mostly offsets down the center of Sections 10 and 15-19-38, where the earlier wells were drilled. These include the Prairie Oil & Gas Co.'s No. 1 Crump, NW NW NE, Section 15, at a total depth of 4,145 feet; its No. 2 Crump, one location to the south of No. 1 Crump, at 4,172 feet; and its No. 1 Selman, one location south of No. 2 Crump, at 4,160 feet. No. 1 Crump proved a surprise as it was in the area where 500 to 1,000-bbl. wells were expected. It gauged 2,270 bbls. in 11 hours and then was shut in. No. 2 Crump made 1,080 bbls. the first 24 hours and No. 1 Selman, the farthest to the south of any producer, is a 600-bbl. well. The Walker Oil Corp.'s No. 2 Terry, SW SW SE, Section 10, made 450 bbls. initial after a shot, and the Midwest's No. 36 State, SE SE SW, Section 10, made 523 bbls. of oil and 15,000,000 feet of gas the first 24 hours from the pay at 4,140-77 feet.

Since the above was written nine other wells have been drilled in, the largest being the Tidal Oil Co.'s No. 1 Grimes, SW NE SE, Section 29-18-38, which gauged 840 bbls. the first hour and is estimated as a 20,000 to 25,000-bbl. well. It extended the proven area nearly a mile to the northeast.

The policy of spacing wells 330 feet back from the lease line prevails in the northwestern and southeastern areas, but towards the center the companies, where there are no drilling offsets, are adopting the 660-foot locations.

Eunice Area—Lea County

In the Eunice area, which comprises a little more than four townships to the south of the Hobbs area, in Lea County, comparatively little work was done during the first half of 1930, though the presence of a productive high in this area had previously been proven in wildcats and was confirmed by another producer early in this year. In previous wildcatting the wells were spaced anywhere from 2 to 5 miles apart. Early in 1930, the Continental Oil Co.'s No. 1 A. E. Meyers, NE SW SW, Section 17-21-36, was completed at 4,001 feet and gauged 1,300 bbls. of 34 gravity oil the first 24 hours after being connected with the pipe line. A flow of 70,000,000 feet of gas per day just above the pay had been cased off. The nearest well to this producer was the same company's No. 1 Lockhart, NE NW NW, Section 31-21-36, 1¼ miles to the south and a little to the west, which in 1929 was completed with an initial production of 278 bbls. after plugging back to shut off water. The Gypsy Oil Co. had previously completed two gas wells 3 miles and 3½ miles to the southeast and the Empire Gas & Fuel Co.'s No. 1 Closson, a mile to the southeast of No. 1 Lockhart, had considerable gas. The last named well, NE NW SE, Section 6-22-36, was finally completed last month at a total depth of 4,190 feet after plugging back to shut off sulphur water at 4,204 and 4,232-37 feet. It averaged 145 bbls. of fluid per day initial, of which 5 per cent was water. The oil tested 35.6 gravity, or the same as that in the Hobbs Pool. This well had more than 100,000,000 feet of gas per day in upper horizons. The elevation of No. 1 Closson is 3,573 feet. The base of the salt was at 3,060 feet, the top of the brown lime at 3,075 feet, and the pay at 3,737-40 feet. No. 1 A. E. Meyers had an elevation of 3,647 feet, topped the salt at 1,370 feet, and the lime at 2,995 feet. Four wells were drilling and one location had been spotted at the end of the first half of 1930. Three of these, the Tidal Oil Co.'s No. 1 Coleman, SW SW NE, Section 17-21-36, the Atlantic Oil Producing Co.'s No. 1 Coleman, SW NE NW, Section 17, and George F. Getty, Inc.'s No. 1 State, NE NE NE, Section 19-21-36, will explore the area around the Continental's No. 1 A. E. Meyers. The Ohio Oil Co. is drilling a wildcat several miles to the southeast and the Continental Oil Co. is drilling still farther to the south. The wells so far drilled indicate that two or more highs in this area will be productive, but more development will be required before any definite appraisal can be made as to their size and importance.

Cooper Area—Lea County

Five wells were completed in the Cooper area, comprising about four townships south of the Eunice area and north of the Jal district. These proved up a small high which previous wildcatting had located and which has a northwest-southeast trend. The Texas Pacific Coal & Oil Co.'s No. 2 State, NW NW SW,

WYOMING

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
BIG MUDDY:							
Daily average	1,802	2,083	1,952	2,009	2,021	2,029	
Month	55,862	58,324	61,442	60,270	62,651	60,870	359,419
LANDER:							
Daily average	407	401	558	520	679	540	
Month	12,617	11,228	17,293	15,600	21,049	16,200	93,993
DUTTON CREEK:							
Daily average	.....	.....	6	54	151	58	
Month	.....	.....	186	1,620	4,681	1,740	8,227
ELK BASIN:							
Daily average	671	744	682	767	813	844	
Month	20,801	20,832	21,142	23,010	25,203	25,320	136,308
FERRIS:							
Daily average	42	19	44	20	62	27	
Month	1,302	532	1,364	600	1,922	810	6,530
FRANNIE:							
Daily average	290	54	406	188	.....	70	
Month	8,990	1,512	12,586	5,640	.....	2,100	30,828
GRASS CREEK:							
Daily average	1,788	1,943	1,949	2,069	2,016	2,159	
Month	55,428	54,404	60,419	62,070	62,496	64,770	359,587
HAMILTON:							
Daily average	637	770	663	776	889	788	
Month	19,747	21,560	20,553	23,280	27,559	23,640	136,339
LA BARGE:							
Daily average	2,242	2,227	2,270	2,140	2,024	2,091	
Month	69,502	62,356	70,370	64,230	62,744	62,730	391,932
LANCE CREEK:							
Daily average	157	167	77	179	128	131	
Month	4,867	4,676	2,387	5,370	4,278	3,930	25,508
LOST SOLDIER:							
Daily average	3,082	3,212	3,152	3,031	3,071	1,242	
Month	95,542	89,936	97,712	90,930	95,201	37,260	506,581
MULE CREEK:							
Daily average	.....	.....	.....	.....	742	.....	
Month	.....	.....	.....	.....	23,002	.....	23,002
OREGON BASIN:							
Daily average	4,114	4,037	5,193	4,701	4,226	5,151	
Month	127,534	113,036	160,983	141,030	131,006	154,530	828,119
OSAGE:							
Daily average	656	991	937	948	941	883	
Month	20,336	27,748	30,597	28,440	29,171	26,490	162,782
POISON SPIDER:							
Daily average	777	387	375	523	1,146	377	
Month	24,087	10,780	11,625	15,690	35,526	11,310	109,018
ROCK CREEK:							
Daily average	2,150	2,190	2,159	2,136	2,095	2,146	
Month	66,650	61,320	66,929	64,080	64,945	64,380	388,304
SALT CREEK:							
Daily average	27,244	30,993	30,527	30,786	29,362	28,262	
Month	844,564	867,804	946,647	923,580	910,222	847,860	5,340,677
SIMPSON RIDGE:							
Daily average	.....	.....	48	51	68	53	
Month	.....	.....	1,488	1,530	2,108	1,590	6,716
TEAPOT DOME:							
Daily average	22	38	36	32	34	33	
Month	682	1,064	1,116	960	1,054	990	5,866
ALKALI BUTTE:							
Daily average	.....	.....	56	.....	.....	.....	
Month	.....	.....	1,736	.....	.....	.....	1,736
REX LAKE:							
Daily average	77	74	35	.....	.....	.....	
Month	2,387	2,072	1,085	.....	.....	.....	5,544
BYRON:							
Daily average	.....	.....	.....	.....	15	11	
Month	.....	.....	.....	.....	465	330	795
Daily average	46,158	50,328	51,215	50,931	50,493	46,895	46,618
Total first six months 1930	1,430,898	1,409,184	1,587,665	1,527,930	1,565,283	1,406,850	8,927,810
Total first six months 1929	1,512,087	1,442,336	1,599,104	1,490,430	1,581,806	1,520,160	9,145,923
Total first six months 1928	1,756,505	1,598,602	1,714,889	1,748,520	1,908,918	1,834,410	10,561,844
Total first six months 1927	1,870,727	1,678,180	1,840,429	1,838,070	1,896,301	1,852,920	10,976,627

Section 21-23-36, was drilled to 3,819 feet where it flowed 278 bbls. of oil and 150 bbls. of water the first 24 hours. It was plugged back to 3,788 feet to produce from the break at 3,709 feet. After plugging back it made 211 bbls. of oil and 165 bbls. of water. This well was 1¼ miles to the northwest of the same company's No. 1 State which last year was completed as a gas well after shutting off sulphur water. The company moved one-fourth of a mile to the north of No. 2 State and drilled No. 3 State, NW SW NW, Section 21-23-36. It had 1,000 bbls. of sulphur water at 3,808 feet and was plugged back to 3,788 feet where it averaged 380 bbls. of oil and 115 bbls. of water daily. At 3,681-3,708 feet this well made 1,687 bbls. in 24 hours, but this was cased off to drill deeper. The Texas Pacific then drilled its No. 4 State a little to the northeast in the NW NE NW, Section 21, and completed it at 3,790 feet as a 40-bbl. well. Cranfill & Reynolds drilled an offset in their No. 1-C State, SW SE SW, Section 16-23-36, to 3,953 feet. It was plugged back to 3,750 feet and shot and completed. It averaged 210 bbls. daily, of which 32 per cent was water. The Texas Pacific then went west and is drilling its No. 5 State in the C E half NE, Section 20-23-36. Results so far indicate a small pool.

Jal Area—Lea County

There was very little activity in the Jal Pool during the first half of 1930 and no new territory was proved up. Wells completed were offsets to producers and showed that these were close to the edge. The Empire Gas & Fuel Co.'s No. 1 Lindley, C NE SE, Section 14-25-36, was the best well. It was completed at 3,379 feet and produced 2,000 bbls. the first 24 hours, of which 25 per cent was cut oil. It was then choked down to 300 bbls. per day. The Humble Oil & Refining Co.'s No. 1 Koonce, SE cor., Section 14, found the pay at 3,304-20 feet and was completed at 3,325 feet flowing 82 bbls. per day. The Empire's No. 2 Lindley, an offset to the Humble well on the south and close to its No. 1 Lindley, NE cor. SE, Section 14, was drilled to 3,337 feet and plugged back and completed as a 50,000,000-foot gas well at 3,310 feet. The Humble company then abandoned the location for an offset to the east of this well and drilling ceased in that immediate territory. The Magnolia Petroleum Co. completed one well 2 miles to the southeast in its No. 1-X Lindley, SE cor. NE, Section 26-25-36, which made 220 bbls. initial at a total depth of 3,335 feet. At the end of June two wells were drilling, both by the Midwest Refining Co. These are semiwildcats and may be intended for deep tests.

Lea Area—Lea County

The Lea Pool, just east of the town of Lea, in Lea County, had nine completions early in 1930, following the opening up of the southeastern end in 1929. These were offset wells with the exception of three semiwildcats drilled farther out and which determined the limits of the pool on the southeast. The northwestern end of the structure, where the Texas Production Co. brought in the discovery early in 1929, and where that company controls practically all the acreage, was not developed to any extent during the first half of 1930, there being no offsets required and the Federal Government exercising its authority to restrain drilling on government land. At the present time there are no wells drilling in the pool. The Continental Oil Co. completed its No. 1 State, NW cor., Lot 12, Section 1-21-33, at 3,783 feet with an initial production of 405 bbls. and the Texas Production Co. completed an offset to this well on the north in its No. 1-B State, SW cor., Lot 5, Section 1. It was drilled to 3,790 feet, but had some bottom water and was plugged back to 3,781 feet where it made 286 bbls. in 24 hours with 5 per cent water. These two wells were very close to the southeastern edge and the limits were definitely located in that direction by the Amerada Petroleum Corp.'s No. 1 State, SW cor., Lot 7, Section 1, which was abandoned at 3,960 feet. It encountered hot sulphur water at 3,958 feet. The Continental had a producer in the SW cor., Lot 12, Section 1, in its No. 2 State, which made 220 bbls. initial at 3,772 feet after plugging off bottom water. Snowden & McSweeny found the southern edge in the NW cor. SW, Section 1, in its No. 1 State, which was drilled to 3,801 feet and pumped 110 bbls. initial, of which 25 per cent was water. Cranfill & Reynolds' No. 1-D State, SE cor., Lot 6, Section 3-21-33, was abandoned at 4,046 feet and marked the edge on the western side. This firm had a good well in its No. 3-B State, which pumped 1,200 bbls. per day, and the Texas Production Co. had two good wells in its Nos. 1 and 2-A State, the first making 2,028 bbls. the first 24 hours and the other 1,208 bbls. The three last named were all inside locations. There is considerable territory to the northwest to be drilled whenever conditions warrant further drilling.

Miscellaneous—Lea County

While there was more drilling in Lea County during the first six months of 1930 than in any similar previous period, the number of wildcats was smaller. The Penn Oil Co. drilled to the west of the Hobbs Pool in its No. 1 State, NE, Section 21-19-36, and abandoned the hole at 5,775 feet. It had 1,000,000 feet of gas at 4,310 feet which soon was exhausted, but nothing else of value. The elevation of this well was 3,859 feet, the top of the salt at 2,145 feet, the base at 3,450 feet and the total depth 5,775 feet. Fisher & Lowrie's No. 1 State, farther to the north and east in the NE cor. NW, Section 11-18-36, had an encouraging show at 5,199 feet when the hole was full of oil, and is drilling deeper. Buell & Hagen abandoned a wildcat at 4,797 feet in the Tatum district in its No. 1 State, C NE, Section 33-11-35. Its elevation was 4,414 feet and it topped the salt at 2,225 feet and topped the lime at 4,248 feet. Hill & Abel's No. 1 Maechtel, SW cor., Section 5-26-33, in southwestern Lea County, went to 5,006 feet and was still in salt when it stopped. It topped the salt at 1,150 feet. The Barnsdall Oil Corp.'s No. 1 Bronson, SE cor., Section 28-16-38, in the Lovington district, north of the Hobbs Pool, was abandoned at 5,160 feet. It topped the lime at 4,697 feet. The Empire Gas & Fuel Co. failed to develop anything new in the Empire area and abandoned its No. 3-B State, SW NE SE, Section 5-21-35, at 4,695 feet. It topped the brown lime at 3,435 feet and had a hole full of sulphur water at 3,938 feet.

Eddy County

There was no drilling of importance in the Artesia Pool in Eddy County and operations were confined mostly to the Maljamar area to the northeast of that pool where an average number of small wells were completed, but no new pools were opened. There was some wildcatting in the southwestern area, R. D. Compton having a dry hole at 1,940 feet in his No. 1 State, SW NW, Section 2-20-25, west of Lakewood, and F. B. Van Horn had a failure in his No. 1 Santa Fe, SE SE, Section 18-19-26, which was abandoned at 2,180 feet upon striking sulphur water.

There were no outstanding developments in other counties of the State. The Cactus Petroleum Co. had a failure in Chaves County in its No. 1 State, SE cor., Section 14-10-26, which was drilled to the Glorietta sand at 2,245 feet where it had a hole full of water. Drilling was carried on to a limited extent in the northwestern part of the State but no new pools were discovered.

NEW MEXICO
Summary of Wells Completed First Six Months 1930

County—	Comp.	Prod.	Dry	Gas
Chaves	1	0	1	0
De Baca	1	0	1	0
Eddy	17	147	9	5
Lea	35	31,347	10	1
San Juan	2	0	1	1
Total	56	31,494	22	7
Same period, 1929	51	4,364	36	8
Difference	5	27,130	14	1
Completions by Months				
January	13	6,045	5	0
February	11	13,980	3	2
March	11	2,451	5	0
April	10	211	5	4
May	6	72	4	0
June	5	8,735	0	1
Total	56	31,494	22	7

COLORADO

Drilling operations in Colorado during the first half of 1930 yielded four worth while gas discoveries, two of which are rather important, no new oil pools, and no noteworthy developments in the proven fields. The most important gas discovery was in Moffat County, in the northwestern part of the State, not far from the Moffat and Iles oil fields and in the same county as the Hiawatha gas field which supplies natural gas to Utah cities and towns. This was on the Bell Rock Dome, 8 miles southwest of Craig and 10 miles northwest of the Moffat Pool. The discovery was made in the Midwest Refining Co.'s No. 24 Hannewalt, NE SE SE, Section 4-6n-92, which commenced spudding in December, 1929, to test a new horizon, the Morapas sandstone. This sandstone forms the escarpment around the Moffat and Iles Domes and was expected at around 4,000 feet. Early in June it cut a 25-foot sand topped at 2,847 feet which gauged 32,000,000 feet of dry gas with a pressure of 1,050 pounds. The sand is in the lower part of the Mesa Verde formation and was unexpected. At 2,861 feet, there was a slight show of green oil in the hole. The gas was mudded off and drilling towards the objective was resumed. The discovery opens a new horizon in northwestern Colorado and extensive leasing on structures in all directions from the discovery followed. Several of these structures, including the one upon which the discovery was made, have been mapped for a number of years, but they were not considered very attractive due to the great depth to the Dakota, estimated to be below 6,500 feet at Bell Rock, and the unfavorable outlook for oil in the upper measures. This situation has undergone a change and more wildcatting in that area is almost certain to result.

The opening of a new gas dome on the Bartram structure in northern Moffat County by the Texas Production Co. really belongs to the record for 1929, since the first gas was found last fall, but the well was drilled deeper earlier this year and gave a better opportunity to appraise its value. The dome is on the Hiawatha fold and about 3 miles west of the Hiawatha gas fields. The test, No. 1 Berlin, SW cor. NE, Section 19-12n-100, started in the Tertiary and at a total depth of 1,575 feet gauged 36,700,000 feet a day with a pressure of 610 pounds. The gas was killed and the hole drilled to a total depth of 2,654 feet. At this depth it had cut several gas horizons with an aggregate flow of more than 72,000,000 feet a day, but water was found above and below the gas and at the bottom of the hole. The well is being plugged back and completed as a gasser. The Mountain Fuel Supply Co. drilled another well on the structure in its No. 1 Lasher, NW NE NE, Section 25-12n-101, a mile to the southwest of the No. 1 Berlin. It had some gas in a Tertiary sand at 2,110 feet and more gas in thin sands. It was carried down to 2,756 feet, but found water and is being plugged back to the sand at 2,110-80 feet where it is being completed as a gas well. It has a considerable volume of gas, but has not been gauged. The two wells mark an extension of the Hiawatha gas

MONTANA

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

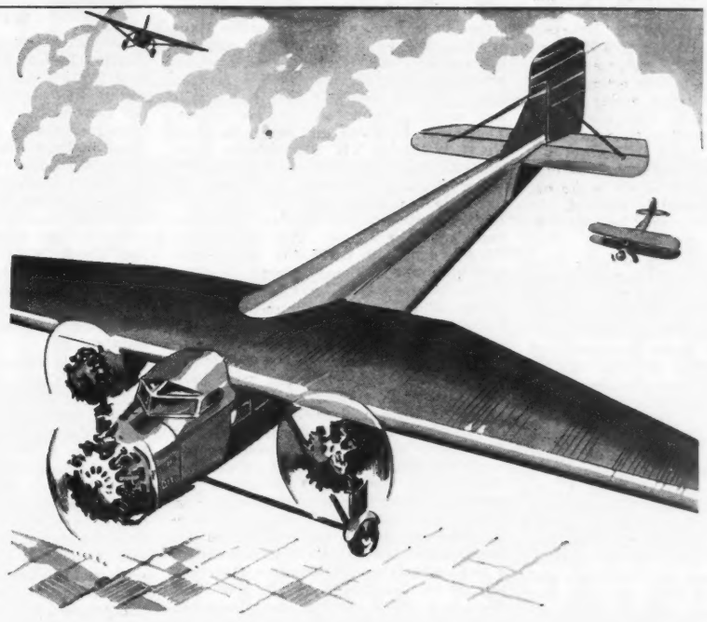
	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CAT CREEK:							
Daily average	1,118	1,236	1,157	1,166	1,166	1,153	
Month	34,658	34,608	35,867	34,980	36,146	34,590	210,849
KEVIN SUNBURST:							
Daily average	4,952	5,277	5,449	6,389	6,142	5,945	
Month	153,512	147,756	168,919	191,670	190,402	178,350	1,030,609
LAKE BASIN:							
Daily average	75	61	62	60	62	69	
Month	2,325	1,708	1,922	1,800	1,922	2,070	11,747
PONDERA:							
Daily average	2,031	1,762	1,963	2,332	2,442	2,373	
Month	62,961	49,336	60,853	69,960	75,702	71,190	390,002
BORDER:							
Daily average	.....	.....	.....	.....	.....	105	
Month	.....	.....	.....	.....	.....	3,150	3,150
Daily average	8,176	8,336	8,631	9,947	9,812	9,642	9,096
Total first six months 1930	253,456	233,408	267,561	298,410	304,172	289,350	1,646,357
Total first six months 1929	261,299	257,656	293,973	298,830	350,238	347,610	1,809,606
Total first six months 1928	363,370	339,679	358,112	350,520	338,272	313,260	2,063,213
Total first six months 1927	426,498	399,868	452,600	417,000	434,155	462,330	2,592,451

COLORADO

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
CRAIG:							
Daily average	1,014	1,152	993	951	902	1,151	
Month	31,434	32,256	30,783	28,530	27,962	34,530	185,495
FORT COLLINS:							
Daily average	1,696	1,671	1,504	1,414	1,379	1,354	
Month	52,576	46,788	46,624	42,420	42,749	40,620	271,777
FLORENCE:							
Daily average	442	864	691	582	616	555	
Month	13,702	24,192	21,421	17,460	19,096	16,650	112,521
ILES:							
Daily average	1,059	1,007	982	952	1,011	1,028	
Month	32,829	28,196	30,442	28,560	31,341	30,840	182,208
TOW CREEK:							
Daily average	546	434	409	477	407	399	
Month	16,926	12,152	12,679	14,310	12,617	11,970	80,654
MISCELLANEOUS:							
Daily average	120	117	75	77	110	78	
Month	3,720	3,276	2,325	2,310	3,410	2,340	17,381
Daily average	4,877	5,245	4,654	4,453	4,425	4,565	4,696
Total first six months 1930	151,187	146,860	144,274	133,590	137,175	136,950	850,036
Total first six months 1929	215,016	182,280	213,125	197,130	223,727	224,220	1,255,498
Total first six months 1928	234,635	232,625	259,563	203,610	204,383	218,940	1,353,756
Total first six months 1927	.....	.....	.....	.....	.....	.....	1,398,539

MANY MODERN WONDERS HAVE NOW BECOME COMMONPLACE



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field, and show that the sands in the area are lenticular and not very dependable, but have added considerable reserve area to supply gas for the Western Public Service Co.'s gas line system into Utah.

Two Discoveries in Rio Blanco

The other two discoveries were in Rio Blanco County, to the south of Moffat County, and near the Utah boundary. The Magnolia Petroleum Co.'s No. 1-A Fordham, NW NW SW, Section 9-2s-96, on the Piceance Creek structure, was started by the White Eagle Oil & Refining Co. as a test of the Green River formation of Tertiary age, the formation in which are the oil shales of western Colorado. In the meantime, the White Eagle was taken over by the Magnolia company and the last named is completing the well. At 2,760 feet it had a show of 3,000,000 feet of gas in a 2-foot sand. Additional shows were found at lower depths, particularly around 2,880 feet, and these have continued at intervals down to the present bottom at 4,750 feet. No figures on the total volume of gas have been released, but it is estimated at more than 10,000,000 feet a day and is considered commercial. The shale was found to be much thicker than expected and at the present depth it has not yet reached a thick sand which has saturation at the outcrop and which is the objective. Until this sand is reached, the importance of the test cannot be definitely determined.

The other gas discovery was in joint operation of the Texas Production Co. and the Ohio Oil Co. on the White River structure in Rio Blanco County, in their No. 1 Potter, C NE SW, Section 30-2n-96. Some gas in upper horizons had been found in previous drillings on this dome, but no deep test had been put down. The operation commenced drilling in June, 1929, with a rotary. The test was undertaken on geology worked out at the outcrops which showed an abnormal condition. The Wasatch was shown by these outcrops to rest on the Mesa Verde with the Post Laramie, Laramie and Lewis shale absent. The contact was expected at around 3,300 feet. However, the drill disclosed that the formations supposed to be absent were in place and the hole was carried down to 5,984 feet where the drill stem was lost and no further depth could be made. It stopped in the base of the Laramie. It was decided to test some showings found below 5,455 feet and a 2½-inch tubing and packer were set at that depth and the well allowed to blow. The well has not thoroughly cleaned itself, but when opened at intervals it would make as high as 2,000,000 feet of gas per day, a little oil and mud and would build up a pressure of 1,700 pounds. What appeared to be a failure now looks as if it might prove an important discovery and further work on this well, or another test probably will be drilled. It did not reach the Mesa Verde sand which showed a large volume of gas in the Midwest discovery on the Bell Rock Dome farther to the north.

No other important discoveries were made during the half year. An encouraging show was found in the top of the Sundance at 2,215 feet on the Round Butte structure in northern Larimer County, in a well drilled by Stanley Barrows in the NW cor. SE, Section 7-11n-68, but 8 feet into the sand water made its appearance and the hole was abandoned at 2,375 feet in the Permian red beds. The showing was so encouraging that several tests are scheduled for drilling in that area the last half of this year.

Wildcats That Failed

The principal wildcats which failed to open anything new included the Phillips Petroleum Co.'s No. 1 Andrews, NW NW, Section 3-2s-42, on the Rosenkranz structure in Yuma County, near the Kansas line. It went to 5,130 feet and cut the entire Pennsylvanian section which previously had not been drilled in that area. It had water at several horizons but no important oil or gas shows. Thomas McLaughlin and others in their No. 1 Williams, NW SW, Section 2-3n-92, tested the fault block south of the Iles Dome in Moffat County, and went 53 feet into the White Cliff at 4,515 feet, finding water in the Dakota, Morrison and Sundance sands. The Continental Oil Co. drilled to 6,075 feet in a Pennsylvanian test in Bent County in its No. 1 Pipe Springs, NE cor. SE, Section 27-27-49. While it had salt water at the bottom and made no important discovery, it did prove to be of considerable geological value. At around 5,900 feet it cut 80 feet of granite wash and went back into lime. This granite wash is believed to be the horizon identified as the granite in which the few wildcats drilled in Southeast Colorado in the past stopped under the belief that it ended all chances. That means few of the wildcats so far drilled in that territory have been conclusive and that more drilling will have to take place before the possibilities are fully disclosed. Sporleder & Elliott drilled a test on the Cuchara Dome in Huerfano County in their No. 1 Abeyta, SW NW, Section 31-27-65, which was abandoned in the Morrison at 2,237 feet, finding no oil or gas and water in the several sands cut.

There were no important developments in the proven fields. The Continental Oil Co. drilled two wells on the Wellington Dome, neither of which came up to former wells; the Texas Production Co. drilled one producer to the Sundance on the Moffat Dome, the Midwest Refining Co. put down one producer to the Morrison on the Iles Dome, a small gas well was drilled on the Berthoud Dome, and the Florence-Canon City district in Fremont County had the usual number of small pumpers and failures, none of which marked any extensions of present area.

COLORADO

Summary of Wells Completed First Six Months 1930

County—	Comp.	Prod.	Dry	Gas
Arapahoe	1	0	1	0
Fremont	15	375	10	0
Huerfano	1	0	1	0
Larimer	4	30	1	1
Las Animas	2	0	1	1
Moffat	2	155	1	0
Pueblo	1	0	1	0
Total	26	560	16	2
Same period, 1929	46	4,464	22	1
Difference	20	3,904	6	1

Completions by Months

January	6	165	4	0
February	2	0	2	0
March	2	0	1	1
April	7	145	4	0
May	4	0	3	1
June	5	250	2	0
Total	26	560	16	2

WYOMING

Exploration work in Wyoming during the first half of 1930, with the exception of a few isolated wildcats, was confined largely to drilling to deeper horizons in the proven fields. This was due in a large measure to results on the Frannie Dome in Park County and on the Ferris Dome in Carbon County in the preceding year and to indications in former years of the possibilities in formations below the developed horizons. Deeper pays were found in the first half of the year in Salt Creek, Mahoney Dome, Little Lost Soldier, and the Dallas and Derby Domes. There were no important extensions of the productive area of any of the pools and three wildcat structural tests were failures.

The most important of the deep tests is in Salt Creek where the Midwest Refining Co., drilling for the company's affiliated interests, started a well a year ago in its No. 29-DT, NW, Section 35-40-79, on a Wyoming Associated lease, with the intentions of exploring all untested horizons down to the granite. This well is approximately on top of the structure. The producing horizons in the field from the top down are the first, second and third Wall Creek sands, the Lakota shale and the Lakota and Sundance sands. Under these lie the Embar, the Tensleep, the Amsden, the Madison and the Deadwood, none of which had been drilled with the exception of one well 400 feet down structure which went to the Embar several years ago and found water. The deep test encountered some heavy production in the Sundance at 2,827 feet which broke loose when circulation was lost and flowed better than 2,000 bbls. a day and 10,000,000 to 15,000,000 feet of gas before it was killed to continue drilling. The Embar was badly broken up and did not yield any favorable results. At 3,780 feet the hole entered the Tensleep and found a pay at 3,790 feet. Five feet in it swabbed 472 bbls. of black oil in 12 hours. At 3,801 feet, it flowed 621 bbls. in 24 hours. It increased to 1,500 bbls. at 3,855 feet and at 3,980 feet it made as high as 1,800 bbls. in 24 hours. The test passed out of the Tensleep at 3,980 feet and entered the Amsden at around 4,000 feet and water made its appearance. It topped the Madison at 4,365 feet and at 4,495 feet was making 65 bbls. of water daily. The water increased with depth until it reached 150,000 bbls. a day. The water was shut off at 4,605 feet and drilling to the lower Madison and the Deadwood is in progress. While a maximum production of 1,850 bbls. a day was found in the Tensleep, the quality of the oil does not compare with that in the upper formations and the productive area will not be very large compared with the area of the field as a whole.

Encoraging Deep Tests

Tests to deeper horizons in Carbon and Sweetwater Counties in the southern and southwestern parts of the State have yielded results that are very encouraging and opened a new horizon that may assume considerable importance. In 1928, the Producers & Refiners Corp. drilled a deep test on the Ferris Dome in Carbon County in its No. 19, NW cor. SE, Section 25-26-87, which at 2 feet in the Tensleep sand at 4,525 feet flowed 25 bbls. per hour of light green oil testing 37.5 gravity. Water made its appearance after drilling deeper and at 4,600 feet it flowed 5,000 bbls. of water per day. It was plugged back to 4,535 feet and completed with an initial production of 125 bbls. a day. The discovery was important not only in opening a new horizon, but in the quality of the oil which was a much better grade than found in the Tensleep in northern Wyoming.

The Producers & Refiners then went a little farther west and made a deep test to the new horizon in its No. 2, SE NW, Section 34-26-88, on the Mahoney Dome, a structure that produced gas from the Dakota series and the Sundance. This was a joint operation with the Midwest Refining Co. It topped the Tensleep at 4,600 feet and at 4,645 feet, oil was standing 800 feet in the hole. The oil like that at Ferris, was a good grade, and tested 34 gravity. It had a mixed base. Drilling was continued to 4,695 feet when the tools were lost. The hole was crooked and a satisfactory test could not be made. It was plugged back and cemented at 4,702 feet where it pumped an average of 70 bbls. a day of 35 gravity oil. Before plugging back the well had flowed as high as 20 bbls. a day. While the condition of the hole prevented a satisfactory test, the well again proved the Tensleep to be productive in the southern part of the State.

A third test to the Tensleep was drilled by the Prairie Oil & Gas Co. on the Little Lost Soldier Dome, still farther to the west and across the line in Sweetwater County, in its No. 75-A, SW NW, Section 11-26-90. The Sundance, in which was found considerable production, was the deepest horizon previously tested. It had oil in the Sundance and in a sand in the red beds and topped the Tensleep at 3,942 feet. It was drilled to 3,962 feet and flowed 1,250 bbls. a day before being shut in. The oil, like that at Mahoney Dome and in the Ferris test, had a mixed base and tested 34.5 gravity. Late in June the hole was cored 2 feet deeper to get a sample of the formation for identification purposes and the well averaged 1,500 bbls. a day on a production test. These discoveries open important possibilities over a wide area not only in southwestern Wyoming but in northwestern Colorado.

Tests to the Tensleep were drilled on the Derby Dome, in the NE SE, Section 4-31-98, and on the Dallas Dome in the NE SE, Section 13-32-99, in Fremont County, by the Dallas Dome-Wyoming Oil Field Co. The first named well, produced 150 bbls. initial from a total depth of 1,325 feet, and the second made 110 bbls. from the Embar-Tensleep at 980-1,150 feet. The oil, however, was heavy black with asphalt base and is not as desirable as that found to the south and southeast.

The Argo Oil Co. went into an old well on the Mule Creek structure in

NEW MEXICO

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total 6 mos. (bbls.)
ARTESIA:							
Daily average	679	773	747	759	716	776	
Month	21,049	21,644	23,157	22,770	22,196	23,280	134,096
CAP ROCK (Maljamar):							
Daily average	968	923	969	906	890	929	
Month	30,008	25,844	30,039	27,180	27,590	27,870	168,531
LEA CITY:							
Daily average	4,927	3,695	4,750	5,768	6,018	5,861	
Month	152,737	103,460	147,250	173,040	186,558	175,830	938,875
GETTY:							
Daily average	.....	21	.....	.....	.....	.....	
Month	.....	588	.....	.....	.....	.....	588
HOBBS:							
Daily average	447	34	89	553	7,313	11,629	
Month	13,857	952	2,759	16,590	226,734	348,870	609,762
JAL:							
Daily average	1,249	1,416	1,448	1,397	1,408	1,340	
Month	38,719	39,648	44,888	41,910	43,648	40,200	249,013
SAN SIMON:							
Daily average	528	265	1,026	1,555	426	452	
Month	16,368	7,420	31,806	46,650	13,206	13,560	129,010
RATTLESNAKE:							
Daily average	856	892	1,290	998	755	1,346	
Month	26,536	24,976	39,990	29,940	23,405	40,380	185,227
TABLE MESA:							
Daily average	111	85	112	107	106	104	
Month	3,441	2,380	3,472	3,210	3,286	3,120	18,909
HOGBACK:							
Daily average	414	415	457	453	386	431	
Month	12,834	11,620	14,167	13,590	11,966	12,930	77,107
Daily average	10,179	8,519	10,888	12,496	18,019	22,868	13,873
Total first six months 1930	315,549	238,532	337,528	374,880	558,589	686,040	2,511,118
Total first six months 1929	87,668	83,384	89,621	98,640	96,751	88,762	544,826
Total first six months 1928	74,865	59,981	69,347	68,160	73,470	58,860	404,683
Total first six months 1927	136,679	138,460	148,738	142,140	112,530	102,120	780,667

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Niobrara County and drilled down to the Tensleep in its No. 7 Wehopeso, SW NW, Section 19-39-60. Water was found in the Sundance, Embar and Tensleep, but the hole is being carried on down to the Madison and at this time is still in the Tensleep at 2,778 feet. A similar test is being made on the Lance Creek Dome in Niobrara County by the Ohio Oil Co., but two holes were lost and the drill has not yet reached any of the objectives.

New Pool in Osage District

The Osage Field in Weston County, in the northeastern part of the State, attracted considerable attention in February when the Osage Trust Co. in a well drilled on the Jones lease in the NE SE, Section 14-46-64, opened a pool in a lense of the Muddy sand, the pay at 1,602-12 feet flowing 800 bbls. naturally in 20 hours. The well averaged 400 bbls. a day through 2-inch tubing for some time. The major operators were active in this field 10 years ago but pulled out when the lower sands were found water bearing. A number of small operators have since found it a profitable operation for them, the oil being purchased and refined in near-by plants. Several good wells within a mile of the producer have since been drilled, but none equalled the Jones well, 200 bbls. being a good average. The Wyomont Producing & Refining Co. went 1½ miles to the northwest and found a duster.

The Texas Production Co. is drilling a test in its No. 1 State, SW SW, Section 36-34-95, on the Alkali Butte Dome in Fremont County, nearly a mile to the north of the discovery well brought in a year ago and it is showing oil at 4,182 feet, but it has not yet been drilled deep enough to show how important an extension of the pool it will be. Only two wells have been drilled to the deeper formation in which the discovery was made, the one now entering the Muddy being the second.

Two discoveries on the Byron Dome in Big Horn County by the Ohio Oil Co., are reported, but one of the wells has not been drilled in and the information regarding the other has not been disclosed, and therefore the results are not definitely known. Its No. 1 Union Gas, NE cor., Section 22-56-97, is said to have shown saturation in a 100-foot core at a total depth of 5,286 feet, but after cementing the casing on top of the pay and erecting tankage, the well has been standing. The other is its No. 1 Easton, SW NE, Section 33-56-97, which is reported showing oil and gas in the Madison lime at 3,770 feet, but which is still drilling.

The Shoshone structure in Park County was given a second test in the Ohio Oil Co.'s No. 1 Burlington, SE SW, Section 21-53-101, three-quarters of a mile west of the discovery, and pumped 70 bbls. a day from the Tensleep at 4,488-4,540 feet.

Several wells were drilled into gas in the Baxter Basin gas field in Sweetwater County, but these resulted in no important discoveries.

The failures among the wildcats included the following:

The California Exploration Co. in its No. 1, NW NW, Section 31-48-89, Nowood Dome, Washakie County, was abandoned at 3,207 feet after testing the Madison lime. It had some small shows of oil. The California Co. abandoned its No. 1 Union Pacific, NE NW, Section 7-17-116, Muddy Creek Dome, Uinta County, in the Woodside formation at 4,815 feet.

WYOMING

Summary of Wells Completed First Six Months 1930

District or County—	Comp.	Prod.	Dry	Gas
Salt Creek	8	3,504	0	0
Big Horn	1	0	1	0
Carbon	2	70	1	0
Fremont	3	260	0	1
Hot Springs	1	193	0	0
Johnson	1	0	1	0
Natrona*	5	90	0	0
Park	9	920	3	2
Sweetwater	3	1,250	0	2
Sublet	6	390	0	0
Uinta	1	0	1	0
Washakie	1	0	1	0
Weston	15	1,619	2	0
Total	56	8,296	10	5
Same period, 1929	39	9,870	8	1
Difference	17	1,574	2	4

*Exclusive of Salt Lake.

Completions by Months

January	11	941	2	1
February	7	2,795	2	2
March	3	1,664	0	0
April	8	325	2	1
May	5	135	3	0
June	22	2,436	1	1
Total	56	8,296	10	5

MONTANA

The development of the Border or Buckley Field in Toole County, northern Montana, was by far the most important item in the review of operations in that State for the first six months of 1930. At the end of this period statistics showed 9 producing wells, with 8 holes abandoned, 9 wells drilling and 5 rigs up. The best production was recorded by the Cosmos Petroleum Co.'s No. 1, on Iowa Holding Co. acreage in Section 2-37-4, this well having made as high as 420 bbls. of oil a day and 5,000,000 feet of gas. The Hannah Porter well on holdings of the same company in the same section probably ranks second with a production rated at 285 bbls. Both of these wells are on the Montana end of the structure which appears to be more productive than the Canadian end, the Montana wells without exception being the better producers. Since the Cosmos well was completed no water has been reported in the Sunburst sand, which carried a heavy dose in that well. The Sunburst sand, found at about 2,400 feet, carried gas in some of the wells but water in others. Oil was found in two sands, a stray between the Sunburst and Ellis and the Vanalta at 2,500 to 2,550 feet, the main producing sand of the field. The north, east and south sides of the field have been tested but so far no wells have been completed on the west side, so there is still doubt as to what locations in that direction may bring forth. At the end of the half year the Border Field was being served by two pipe lines, the Illinois Pipe Line Co.'s carrier and that of the Maple Leaf Refining Co. of Coutts.

The Kevin-Sunburst Field in Toole County has recorded nothing of especial interest since the beginning of the year. Drilling has been confined mainly to the proven area and no gushers have been completed. Late in June operators of the Abell lease cleaned out well No. 1, completed in October, 1923, and found 300 feet of oil in the hole after the accumulations of six years had been removed. One of the old Queen City wells on the Moore lease was cleaned out and bailed dry of water recently, only to fill up 900 feet with oil after standing overnight. The well will be tested and will possibly go back on production. Such occurrences indicate that a rehabilitation program on the part of Kevin-Sunburst operators would increase production of the field materially. There were possibly 20 rigs up and drilling at the end of June. The Texas Pacific Coal & Oil Co.'s deep test on Section 36-35-2, is still working, having reported considerable gas at 3,058 feet and again at 3,070 feet. Oil showings were encountered in both the Ellis sand at 1,435 feet and the Madison at 1,635 feet, but nothing has been found since except gas. The Montana Gas Co.'s test on Section 12-34-3, west of the once-famous Queen City wells, was expected to open a new pool but came in a duster.

The Cat Creek Field in Petroleum County is shipping oil regularly but reported only one new well started during the half year. This well will be drilled by the River Dome Oil Co. which controls leases in the center of the field. The Carroll well, drilled last winter, was put on the pump in the spring and made 32 bbls.

Attention of operators in the Pondera Field, Pondera and Teton Counties, appears to be centered on the west side. A number of good completions in the Madison lime were reported from this district during the first half of 1930 though work was late getting under way on account of severe weather and resultant bad roads in the spring. Early in the year a group of Denver oil men comprised mainly of officials of the Midwest Refining Co. and the Argo Oil Co., took over the interests of the Montana Pacific Oil Co. in the Pondera Field. Over 150 producing wells have been completed in this field since its discovery.

At the end of the half year the Bannatyne Field in Teton County appeared to have taken a new lease on life with the long-awaited pipe line practically completed and a 700-bbl. refinery constructed to handle the output of the wells. The W. F. Brittian interests laid the 8-mile line and the Sterling Oil Co. built the refinery at the railhead. This field has 28 wells capable of small commercial production. No wells have been completed recently but the "56" Petroleum Co. and the Rocky Mountain Pacific Oil Co. have rigs up ready to drill.

Good Gas Wells

A number of good gas wells, producing from 20,000,000 to 26,000,000 feet respectively, were completed in the Baker-Glendive area during the six months' period. No new territory was added to the gas field, however. This district is very active as a result of the construction of a 190-mile gas line to North Dakota and also of the formation the Northwest States Utilities Co. which gives the Minnesota Northern Power Co. control of a number of gas-producing and distributing companies in Montana. This merger will be covered elsewhere in this report.

Testing Carbon County

The Ohio Oil Co. is still working on its second well in the Dry Creek Field in Carbon County, near Red Lodge. The first well in this field has been supplying the Billings line with gas during interruptions of service through the Elk Basin-Billings line. Gas was found in No. 1 at 4,500 feet and No. 2 has developed several flows between 4,500 and 5,100 feet. At 5,150 feet a very wet gas carrying considerable naphtha was struck and the well made a flow that shot the naphtha over the crown block. The well is still drilling below 5,100 feet and indications point to additional gas or oil production within the next few hundred feet.

The Bears Den structure in the Sweetgrass Hills, Liberty County, can be considered an established field since the completion of a second well. The Sunburst Oil & Refining Co. started its No. 1 Watford on Section 18-36-6, in April and found a gas flow at 1,900 feet, in the Colorado shale. At 2,574 feet a showing of oil was encountered above the Ellis-Madison contact. The well was completed at the contact at 2,592 feet and is credited with 5,000,000 feet of gas and a 38-bbl. oil production.

New Field in Toole County?

Indications point to the opening of a new field in Toole County where the Black Gold Petroleum Co.'s No. 1 Syr on Section 30-36-2e, found a 15-bbl. production in the Sunburst sand at 2,430 feet. The well was considered a 1,000,000-foot gasser or better in the Colorado shale at 1,454 feet. Drilling was continued to the Ellis-Madison contact where sulphur water was encountered. The hole was plugged back to the Sunburst and will be shot. The well is located on the Barthelote Dome, 12 miles from the Kevin-Sunburst Field and 15 miles from Bears Den.

The Laurel Oil & Refining Co.'s plant at Laurel, one of the most modern in the State in the way of equipment, was completed in April but has not yet been put on steady operation due to adjustments necessary for handling the heavy crude from the Oregin Basin (Wyoming) Field. The plant will have a capacity of 10,000 bbls.

Late in June work was begun on the Big Horn Oil & Gas Co.'s refining plant at Billings which will involve the expenditure of from $75,000 to $100,000. Billings is to have another refinery, according to reports in circulation here which credit the Continental Oil Co. with plans to build a plant to handle Cat Creek oil.

Early in June the Northwest States Utilities Co. was organized by merging a number of the major oil companies producing and distributing gas in Montana into one organization controlled by the Minnesota Northern Power Co. (Montana Dakota). The companies affected by the merger include the Montana Cities Gas Co., serving Great Falls; the Northern Natural Gas Development Co., producing gas in the Kevin-Sunburst Field for the Great Falls line; Central Montana Utilities Co., itself a merger of the Book interests of Detroit and the Minnesota Northern Power Co. to serve Lewiston; Havre Natural Gas Co., serving Havre and Chinook; Pondera Utilities Co., controlled by Minnesota Northern and serving Conrad, Choteau, Valier and the Pondera Field.

MONTANA

Summary of Wells Completed First Six Months 1930

District—	Comp.	Prod.	Dry	Gas
Kevin-Sunburst	33	568	12	3
Pondera	6	694	0	0
Border Field	6	736	1	0
Fallon County	6	0	0	6
Toole County	2	0	0	2
Big Horn County	1	0	0	1
Sweetgrass County	1	38	0	0
Garfield County	1	0	1	0
Chateau County	1	0	1	0
Liberty County	1	0	1	0
Rosebud County	1	0	0	1
Yellowstone County	1	0	1	0
Galatin County	1	0	1	0
Teton County	1	0	1	0
First half 1930	62	2,036	19	13
First half 1929	138	7,481	22	13
Difference	76	5,445	3	0

Wells Completed by Months

January	7	194	3	1
February	4	126	2	0
March	5	283	1	0
April	6	590	0	1
May	15	125	4	5
June	25	718	9	6
Total	62	2,036	19	13

UTAH

Utah, which has carried on an intermittent drilling campaign in search of oil for a number of years, again scored a blank during the first half of 1930. The most promising wildcat was the Continental Oil Co.'s test on the Boundary Butte structure in San Juan County in the southeastern corner of the State. This well, which was under way for a number of years, is located in the NW SW, Section 22-43-22. Several years ago it showed for about 25 bbls. a day in the Shinarump conglomerate at 1,590 feet after which it was shut down until an act of Congress settled the title to the land upon that structure. Last December it began showing gas in the lower Pennsylvanian at 4,525 feet, the quantity being 5,000,000 feet a day. At 5,102 feet the total had increased to about 15,000,000 feet a day. Drilling for a while was through a special string of 3½-inch casing and the hole reached a total depth of 5,612 feet and the total gas increased to 17,000,000 feet, but the tools were lost and it could not be drilled deeper. Another well may be drilled on the structure at an early date to test the oil showing. The Utah Southern Oil Co. drilled a test in the SW SE, Section 26-21s-23, on the Cisco structure in Grand County to test out the theory that this was the short line of the great salt basin which had been exposed to the southeast in former drilling, but at 2,297 feet it ran into granite and the hole was abandoned at 2,431 feet. The granite was found immediately below the red beds and the objective Pennsylvania formation was not in place. The Carbon Dioxide & Chemical Co. drilled in a carbon dioxide gas well on the Farnham Dome in Carbon County, in the SE SW, Section 12-15-11e. The gas, 1,500,000 feet a day, was found at 3,150 feet. The well was drilled for that kind of gas to be used in the manufacture of dry ice. The Midwest Refining Co. is drilling in Kane County for the Utah Oil Refining Co. in a wildcat that has had some showings of oil, but is not yet a completion. A few wells were drilled in other parts of the State but none of these succeeded in breaking the streak of bad luck which has followed wildcatting to date in that State.

UTAH

Summary of Wells Completed First Six Months 1930

County—	Comp.	Prod.	Dry	Gas
Grand	1	0	1	0
Carbon	1	0	0	1
Total	2	0	1	1
Same period, 1929	3	0	3	0
Difference	1	0	2	1

Completions by Months

January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	2	0	1	1
Total	2	0	1	1

GULF COAST BROKE PRODUCTION RECORD

(Continued from Page 146)

field's daily output has dropped off from 6,000 to 8,000 bbls. from the peak reached early in March but the opening of new pools on the west, northwest, north and the finding of lower sands on the east and northeast has resulted in a shift of activity to those sides although production so far has not been as prolific as on the south side of the dome.

Of all the Gulf Coast fields Refugio was perhaps the most outstanding during the first half of the year with a total production of 6,038,766 bbls. for the six months. The rise of this field has occurred almost entirely within this period as the production for the entire year of 1929 was only 1,751,302 bbls., 1,439,129 bbls. of which was during the latter six months of that year.

Big Production From Seven Fields

Seven Gulf Coast fields produced more than 2,000,000 bbls. each during the first half of the year, and the production of these seven fields, a total of 22,176,724 bbls., represented more than three-fifths of the entire production of all of 53 fields. A comparison of the production of these seven fields with that of preceding periods showing gains and losses respectively follows:

Field—	First 6 months 1930 (bbls.)	Last 6 months 1929 (bbls.)	Total 1929 (bbls.)
Refugio	6,038,766	1,439,129	1,751,302
Barbers Hill.	4,168,155	3,265,831	4,523,350
Spindletop ..	3,055,540	4,416,684	10,183,684
Humble	2,787,449	1,220,981	3,296,409
DeWalt	2,081,993	2,244,537	4,016,401
Pierce Junction ...	2,038,766	2,484,889	5,193,061
Raccoon Bend	2,006,055	1,522,039	2,082,595
Total	22,176,724	16,595,090	30,046,802

It will be noted that Spindletop has given up its position as first producing field on the Coast, a place it has held continuously since its deep sand development got under way. Thus apparently there has passed from the lead the coast's oldest, most prolific, most famous and romatic of fields. It now has been succeeded by both Refugio and Barbers Hill which have been above it throughout most of the past six months, and part of the time by Humble when the latter was at the peak of the development of the deep sands on the south side. Spindletop, which a year ago was holding around 30,000 bbls. daily, now is yielding in the neighborhood of 16,000 bbls. This is not taken to indicate that this field forever is through as there is left a considerable amount of territory on the east and northeast sides of the dome which has been undeveloped for the deep flanking sands. A steady amount of drilling has been carried on so far this year although most of this has been confined to proved or semiproved inside acreage on the south and southeast sides or in the reworking of old wells. Lately, however, since the extension of production a substantial distance to the northeastward around the dome a material amount of new drilling has been undertaken in efforts to connect the new production with the main field to make further extensions.

Virtually all developments of importance during the first half of the year hinged around the drilling up of the lower horizons at Refugio, Barbers Hill and Humble. In contrast with the consistent active drilling program carried on at each of these fields, operations in other parts of the Gulf Coast during that period were spotted and spasmodic and generally disappointing and of little concern as far as new production was concerned.

Fewer Completions—Deeper Drilling

In a summary of field operations as indicated in an accompanying table there was an almost general slowing up of completions, there being only 672 completions reported during the first half of 1930 as compared with 782 completions in the first six months last year. As there was no decrease in the number of rigs running, the fewer completions were a reflection of the deeper drilling which has been going on. The active development of such fields as Raccoon Bend, DeWalt, the 3,700-foot sand at Refugio, Old Hackberry and others which contributed large numbers of completions in rapid order during 1929 because of comparatively shallow sands has given way to the deeper sand areas and to numerous scattered wildcat prospects where drilling is considerably slower and far more expensive.

Shift in Lease Play

The first half of the year was marked by a very noticeable general let up in geophysical exploration and lease play in the salt dome territory with a shift in this interest to what is known as the lower Gulf Coast territory comprising chiefly Jackson, Victoria, Calhoun, Refugio, Bee, Goliad, Nueces Counties. The development of Refugio to such large proportions with a possible successor in the new Pettus Field stimulated a rush of lease men and royalty buyers not only from the salt dome area, where such plays were slow, but also from all parts of Texas and the Mid-Continent. Out of this lease and geophysical play has arisen several interesting wildcat drilling programs, and the opening of another new field. The latter is the discovery of Lion Oil & Refining Co.'s No. 1 McFaddin, M. Traviers Survey, west central Jackson County, which wildcat early in June was completed as a 25,000,000-foot gas well from a sand at approximately 3,800-feet. The Texas Company, which obtained a block to the southwest of Lion's holdings, is rushing the drilling of the second test in that area, its No. 1 McFaddin, approximately 2½ miles southwest of Lion's wildcat gasser, and the latter company in turn is starting up on the third test.

In the salt dome territory with the cessation of the active geophysical exploration which has featured the coast for several years resulting in the reported checking of upwards of 150 new "salt dome" prospects and structures a definite attempt has been carried on since the opening of the year to prove or disprove the work of instruments. The elimination during 1929 of a large number of the so-called new geophysical domes by deep test failures has been followed this year by the abandonment of several others from the favorable class, among these being Genoa, south of Houston, and Clodine in eastern Fort Bend County. A large number of other geophysical prospects, although not abandoned by operators, have failed to reveal any indication of a dome or production in the first tests drilled or drilling in the development programs launched this year, or carried over from late 1929.

Only One Field Opened

In contrast with the 14 new fields opened during 1929 on geophysically discovered domes or structures, there has been only one new field opened in salt dome territory so far this year, that being on the Moss Bluff Dome, where the discovery well was completed January 2. This discovery well of the field, Humble Oil & Refining Co.'s No. 6 Sterling, has been shut in since its first day's flow and consequently the field has had no part in the Gulf Coast's production for the first half of the year. Within the past month, however, Gulf Production Co. has brought in Moss Bluff's second producer, the company's No. 1 McFaddin, a north offset to the Humble producer.

The discovery well at Moss Bluff, located on the extreme east side of the dome, flowed 864 bbls. in the 24 hours it was allowed to flow. The discovery followed a consistent drilling program on the part of the Humble company which had gradually moved eastward from off the dome in a series of six tests until the deep flank sand at a total depth of 5,666 feet was found. The Gulf well, the first test drilled since the completion of the discovery well, came in early in July flowing at the rate of 1,000 bbls. daily but was choked in to approximately 100 bbls. because of lack of storage facilities. Although just north of the Humble well its producing sand is somewhat lower at a total depth of 5,831 feet. As this is written one other test is drilling at Moss Bluff, this being Shell Petroleum Corp.'s No. 1 Herff on the extreme south side of the dome. This test at present has a fishing job with bottom of hole at 5,630 feet.

Moss Bluff is one of the oldest of the geophysical salt domes found on the Gulf Coast and soon after its discovery the drilling of a series of shallow tests proved the work of the instrument by going into cap rock and salt.

One More Prospect

Although drilling on new geophysical prospects this year, generally speaking, has been disappointing as far as proving the existence of the domes or the opening of new production, the finding of salt at Danbury by the Shell Petroleum Corp. added one more prospect to the list of known domes making a total of 34 geophysical discoveries which have been proved definitely as salt domes.

The Danbury Dome also gave some indication of making a field, a shallow sand at 1,579 feet in Shell's No. 1 Blakely-Winston having swabbed some oil. Although the well has not been completed it may make a small pumper. This well, the first drilled at Danbury, went into salt at 5,228-55 feet after encountering a number of sands which failed to yield commercial production. The well first was plugged back to sand at 1,667 feet, testing salt water, and then at 1,579 feet where it swabbed at the rate of 124 bbls. of fluid, 50 per cent oil, daily. Since this a second test drilled to this shallow sand was dry and has been abandoned while a third test is drilling.

At Manvel, northern Brazoria County, The Texas Company is drilling upon what is considered one of the most favorable of the remaining unproved geo-

(Continued from Page 146)

GULF COAST—LOUISIANA

Daily Average and Monthly Production of Crude Oil First Six Months of 1930

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	Total (bbls.)
ANSE LA BUTTE:							
Daily average	945	47	36	39	37	33	
Month	1,395	1,330	1,116	1,162	1,147	999	7,140
BAYOU BLUE:							
Daily average	44	119	72	89	77	63	
Month	1,365	3,339	2,238	2,681	2,370	1,902	13,894
BAYOU BOUILLON:							
Daily average	67	38	660	720	200	90	
Month	2,088	1,061	20,447	21,619	6,216	2,687	54,118
BLACK BAYOU:							
Daily average	45	384	87	82	243	723	
Month	1,396	10,742	2,700	2,455	7,523	21,685	46,502
CAILLOU ISLAND:							
Daily average	59	28	.....	.....	.....	.....	
Month	1,841	798	.....	.....	.....	.....	2,639
EDGERLY:							
Daily average	841	577	480	558	531	634	
Month	26,056	16,164	14,879	16,743	16,462	19,031	109,335
JENNINGS:							
Daily average	1,816	1,146	825	929	819	1,844	
Month	56,310	32,095	25,581	27,873	25,401	55,328	222,588
HACKBERRY:							
Daily average	3,257	3,045	3,818	3,652	3,396	2,982	
Month	100,956	85,263	118,373	109,573	105,287	89,469	1,023,016
LAKE BARRE:							
Daily average	276	246	804	1,311	852	718	
Month	8,541	6,874	24,911	39,318	26,410	21,532	127,586
LAKE PELTO:							
Daily average	282	203	208	195	199	177	
Month	8,745	5,684	6,437	5,844	6,157	5,299	38,166
LOCKPORT:							
Daily average	3,070	3,201	2,706	2,786	2,793	2,774	
Month	95,173	89,639	83,882	83,570	86,747	83,225	522,235
PORT BARRE:							
Daily average	821	1,869	1,693	1,982	2,207	3,491	
Month	25,458	52,332	52,489	59,464	68,424	104,738	362,895
SORRENTO:							
Daily average	108	92	90	128	159	186	
Month	3,360	2,569	2,804	3,831	4,940	5,573	23,079
STARKS:							
Daily average	626	464	423	470	466	491	
Month	19,404	12,992	13,106	14,106	14,454	14,738	88,800
SULPHUR:							
Daily average	4,066	5,594	3,443	4,256	5,282	3,704	
Month	126,050	156,625	106,731	127,675	163,723	111,130	791,934
SWEET LAKE:							
Daily average	22	21	99	120	107	105	
Month	685	560	3,072	3,598	3,307	3,150	14,372
VINTON:							
Daily average	3,897	3,790	5,726	3,830	3,924	4,881	
Month	120,798	106,113	177,503	114,905	121,655	146,432	787,406
WELSH:							
Daily average	204	185	119	175	163	147	
Month	6,329	5,166	3,691	5,243	5,049	4,420	29,898
WHITE CASTLE:							
Daily average	363	376	371	380	512	1,122	
Month	11,245	10,507	11,511	11,392	15,869	33,672	94,199
Daily average Louisiana Gulf Coast	19,909	21,424	21,660	21,702	21,972	24,166	21,739
Total Louisiana Gulf Coast	617,197	599,854	671,473	651,052	681,141	724,991	3,945,708
Daily average total Gulf Coast	189,731	200,696	196,943	199,335	199,410	207,155	198,797
Month total Gulf Coast	5,881,489	5,619,270	6,105,265	5,980,067	6,181,740	6,214,648	35,982,479
Total first six months 1929	4,344,233	3,959,613	4,586,507	4,705,904	4,673,923	4,484,434	26,754,614
Total first six months 1928	3,796,856	3,652,390	3,796,816	3,760,253	4,155,544	4,114,796	23,276,495
Total first six months 1927	5,232,366	4,409,580	4,837,581	4,420,560	4,762,127	4,612,620	28,274,834
Total first six months 1926	3,022,877	2,820,608	3,034,683	2,842,050	3,208,731	2,949,970	17,779,489

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Clark & Cowden, Duncan, Okla.
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Golden & Cochran, Wink, Texas
Haynes Drilling Co., Wink, Texas
Murphy & Graham, Seminole, Okla.
Steinberg & Yerkee, Seminole, Okla.
Fain-McGaha, Wichita Falls, Texas
Alleson & Clevinger, Seminole, Okla.
Winkler & McQueen, Duncan, Okla.
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physical prospects. This test, No. 1 Ewing, Harvey N. Little Survey, encountered a sand showing oil at a total depth of 5,530 feet but in a drill stem test showed salt water. The hole early in July was being drilled deeper below 5,630 feet.

Indication of a field on another geophysical dome, was given with the completion by The Texas Company of a 1,000-bbl. well in its No. 2 State at Caillou Island, southern Terrebonne Parish, Louisiana. The production, however, failed to hold up and the hole, after being deepened from the 3,229-43-foot sand to a total depth of 3,292 feet, where it tested sulphur water, was abandoned.

As previously mentioned the chief interest of coastal operators most consistently centered around Refugio, Barbers Hill and Humble although the wildcatting program carried on or started on many coastal geophysical prospects was of considerable importance in view of the intense geophysical exploration carried on during 1929 and 1928 and the desire of operators to learn to what extent the great number of reported instrument discoveries would prove out domes and possibly fields.

Refugio's Town Lot Boom

At Refugio, the year opened with an active town lot drilling boom spreading the productive area out rapidly and resulting in daily production increases with apparently no end in sight. The comparatively shallow producing horizon around 3,700 feet furnished easy drilling and completions came in rapid succession. The discovery late in 1929 of a 5,500-foot producing sand in a wildcat, Union Producing Co.'s No. 1 O'Brien, drilled some distance east of the main development, was followed early in 1930 with the completion of a second deep well from the same horizon but approximately 1½ miles to the south. Although the discovery well since has proved a freak with a circle of salt water wells being completed around it, the stimulus for deep production has resulted in the development of a long line of production at 5,400-5,500 feet up the east side of the original 3,700-foot field. With the exception of a few wells all the 5,500-foot production, however, has been confined to a narrow "shoestring" strip. Several deep tests drilled at scattered locations in the Refugio area were rewarded with salt water. Independent Oil & Gas Co., however, recently found what appears to be the same sand, although at a depth of 5,656-65 feet, in its No. 1 Helen Reilly, 1½ miles to the west in the center of the old gas producing area. This, an old 3,600-foot hole deepened, flowed approximately 200 bbls. of oil although accompanied by lots of salt water. This gas area is the high part of the field and is flanked on nearly all sides by the 3,700-foot oil production. The Reilly log indicates a fault of unconformity of some kind at that point and the well is the only deep sand production on the inside of the 3,700-foot field.

Deep Sand in Extension Well

A 2-mile extension northeastward was made to the Refugio area and a third horizon opened for production late in February by Union Producing Co.'s No. 1 M. F. Lambert, which was completed flowing 1,700 bbls. daily from a total depth of 5,884 feet. Since, a half dozen key tests have been drilled to link the production of that well with the main Refugio producing area and also to prove up additional production around that well but with one exception all were complete failures. That one well, Union Producing Co.'s No. 2 M. F. Lambert, 1,500 feet east of No. 1, swabbed a small amount of oil from the same horizon but even this was not considered commercial and the well has been abandoned. Houston Oil Co.'s west offset, No. 1 Rose Lambert, which as this is written is waiting cement to set to test the sand is one of two chances left to extend that production, the only other location remaining to be drilled being a north offset.

A fourth producing horizon was found by the same company's No. 1-A Rose Lambert, which, located between the M. F. Lambert well and the 5,500-foot sand field, drilled on down to a sand at 6,458-68 feet after showing salt water in both the 5,500 and the 5,900-foot sands. Although this was the 6,400-foot sand discovery well, flowing initially 200 bbls. daily, it soon went to water and then quit entirely. The completion of Mission Drilling Co.'s No. 1 Moss, Block 110, on the east side of the town lots definitely established the sand as a producer. It came in at 6,454-70 feet spraying oil but gradually increased its flow to around 500 bbls. daily. This well is 6,000 feet southwest of the first 6,400-foot well and is located in an undeveloped strip lying between the 3,700-foot production and that of the 5,500-foot wells to the east. Several other tests at various times and at scattered locations have been drilled in the Refugio area to that depth and have encountered the sand but these two wells are the only ones which have made wells.

Too Much Crude Cut Price

During the peak of the 3,700-foot sand development previous to April when daily output of the field was run up almost unobserved, an acute congestion in the movement of crude resulted in the lowering of the price to as low as 50 cents. Although the field is only a short distance inland from deep water terminals on the Gulf only one small line, a combination 4 and 6-inch line had been laid to the field up to this year, operators relying on tank cars for the handling of most of their production. With the rapid development of the town lots and the subsequent boost in daily output, a large amount of cheap crude, desirable for fuel oil, gas oil or Diesel oil, was offered on the market and proved a competitive factor in some areas. Since, however, the Gulf Coast Pipe Line Co., owner of the small line, has put in an additional pump station, boosting the capacity of the line, and has laid an 8 and 10-inch loop line, and Humble Pipe Line Co. has put in operation another line, putting Refugio crude on a Gulf Coast price basis. In the meantime, the development of the 3,700-foot sand has reached its peak and the daily production of the field has reflected steady declines. Whether the deep sand development eventually will offset the slackening in the 3,700-foot area remains to be seen. From present indications the deep sands, although proved to underlie a vast area, have yielded only comparatively small and spotted production and have not proved any important factor.

Barbers Hill Development

At Barbers Hill the chief developments included the opening of deep flank sand production in three new areas on the northwest, southwest and the extreme north. On the northwest, Humphreys Corp.'s No. 8-A Kirby opened a new deep pool there when it came in flowing 8,905 bbls. the first 24 hours from sand at 6,416 feet. On the southwest side Yount Lee Oil Co.'s No. 1 Zadie Fisher drilled to a total depth of 6,929 feet, but plugged back and with screen set at 6,661 feet, was completed flowing 2,085 bbls. in the first 24 hours. On the extreme north side Humphreys Corp.'s No. 1 Morgan, at a total depth of 6,404 feet, was completed flowing 240 bbls. daily. These discoveries resulted in the starting up of a new active drilling campaign in the remaining unproved sectors of the dome. A continuation of active development on the east, southeast and south sides of the dome resulted in the proving up and filling in of the gaps in the complete line of production from the extreme northeast around through the south flank. The opening of additional pools on the extreme northwest, north and on the southwest has served to indicate the production is continuous around the entire dome and the drilling which has got under way so far this year has been an attempt to link the various new pools with the older production on other sides of the dome.

Humphreys Corp.'s well, No. 8-A Kirby, on the northwest flank, at the time of its completion the deepest producer on the Texas Gulf Coast, proved to be

the largest and most consistent well ever completed at Barbers Hill. With an initial production of more than 8,900 bbls. it increased in flow and with changes in chokes made as high as 12,000 bbls. daily and held consistently for a long period without the appearance of water. An offset to this well, No. 1-F Barbers, was drilled to this horizon and after two tests, first at 6,487 feet and again after deepening to 6,492 feet, failed to make commercial production although it flowed for a short time. It then was deepened to 6,521 feet, where its initial flow was 4,250 bbls., 2 per cent water, but which flow soon dropped off with a substantial increase in water production. Two other tests now are drilling in this area.

Oil at 7,292 Feet

Yount Lee Oil Co.'s No. 1 Zadie Fisher, discovery well of the southwest flank, at present the deepest well at Barbers Hill, has not held up so well. Although flowing 2,085 bbls. the first 24 hours and starting a competitive drilling program in that area, its production has dropped off rapidly and it now is making a large amount of water. No other tests there have reached that horizon. Humphreys Corp.'s No. 1 Morgan on the extreme north was a small well of 240 bbls., and at its depth of 6,404 feet, probably is not of commercial importance except as an indication of production there and as a guide in future drilling on that side. Another deep wildcat on the north, No. 2 Scott, 1,500 feet east of No. 1 Morgan and about 2,000 feet to the north and west of the northernmost production on the east side, also found oil at a total depth of 7,292 feet but the well would not flow and efforts will be made to pump it.

Developing Humble's Deep Sands

At Humble, the first half of the year witnessed the rise of development in the deep sand pool on the south side of the dome to peak production and the consequent playing out of this activity. In its place, new deep production pools have been found on the west, northwest and northeast and like at Barbers Hill, work there the past six months has been centered on proving up those various areas. Principal among the new production opened was that on the west side, discovered by Sun Oil Co.'s No. 3 Bender, which made an initial flow of 1,500 bbls. from sandy shale at 3,903 feet but which later materially increased its flow. Although there have been several disappointments and setbacks there, six other producers have been completed to date. On the northwest, a group of independent operators are carrying on an active play as the area is comprised of a number of small tracts. As a result of this a series of fair producers were brought in during the first part of the year.

Coast's Deepest Producer

At Jennings (Evangeline), Acadia Parish, Louisiana, Yount Lee Oil Co. continued its deep development program. The deep production opened on the southeast side of the field at a 7,400-foot horizon is the deepest on the Gulf Coast. The discovery well, No. 6 Houssierre-Latrielle, completed in June, 1929, flowing 2,500 bbls., still is flowing better than 100 bbls. daily and is furnishing sufficient gas for 12 boilers. The second well, No. 7 Houssierre-Latrielle, completed early in 1930, has not proved as good a well, but No. 8, which was brought in June 14 at 7,439 feet flowing 1,800 bbls., so far has been a consistent producer. Yount Lee Oil Co. attempted to find deep production on the extreme northwest side of the dome in a wildcat, No. 1 Simms fee, but abandoned this after going to 7,310 feet.

Wildcatters Went Deep

The first half of the year was marked by a decided effort at deeper drilling not only around the older domes but also in most of the wildcats put down. The record of 8,250 feet set by Yount Lee Oil Co. in its No. 4 Crowley on the northeast side of Jennings last year has been surpassed this year by The Texas Company's No. 5 Rayne heirs on the southeast side of the dome which still is drilling below 8,345 feet. The second deepest test drilled this year was Benedum & Trees' No. 1 Foley on the south side of Humble which has just been abandoned in heaving shale at 8,181 feet with drill stem stuck. Tests to 7,000 and 7,500 feet were frequent and except in a few areas very little drilling was down less than 4,000 to 4,500 feet.

However, in contrast to this, shallow sand pools were opened on two domes on which production already had been obtained from deeper flank sands. These pools were at Starks, Calcasieu Parish, and East Hackberry, Cameron Parish. At the former, Gulf Production Co. has been completing a string of shallow wells in sands ranging from 500 to 1,100 feet on top the dome. For several years this company had been drilling around the sides of the dome with mediocre success but showings encountered in sulphur tests drilled by the Texas Gulf Sulphur Co. resulted in the production company quitting its deep drilling in preference for the shallow sands. At East Hackberry, where first production, discovered in November, 1927, has been from sands below 3,600 feet on the south side of the dome, Calcasieu Oil Co. drilled a wildcat, No. 17 Watkins, 1,200 feet north of the deep field and found a sand at a total depth of only 2,712 feet, and got a 1,600-bbl. well. This completion has been followed by the bringing in of two additional wells from this sand.

Conservative Operations

Development this year at Port Neches, Hankamer, Esperson and Port Barre, four of the 14 new fields opened on the Gulf Coast during 1929, gave further indications of the potential possibilities of these areas. Although the drilling in each of these fields has been carried on conservatively it has been marked by the further proving up of production by the addition of good wells. At Black Bayou, Cameron Parish, another of the new 1929 fields, Shell Petroleum Corp. obtained some additional production in two deep wells, one on the north and one on the south but at present work has subsided. However, arrangements have been made with the Freeport Sulphur Co. for that company to develop the cap rock area for sulphur.

Operations at Lost Lake, Chambers County, Bayou Blue, Iberville Parish, Louisiana, and at Mykawa, Harris County, have not been entirely successful, and a let up in work has been experienced. At Mykawa, where two gas wells were completed and which produced a small amount, subsequent drilling has met failure and at present there is no production and only one rig running. At White Castle, Iberville Parish, a second well was completed this year, and this, like the discovery well, has shown a tendency to improve with age. This field is owned by the Shell Petroleum Corp., which with the two wells now has a daily production there of around 1,200 bbls. One rig is maintained in the field and as the production is deep the development necessarily is slow. On the seven new Terrebonne Parish domes, which The Texas Company took over from the Louisiana Land & Exploration Co. on a working arrangement, a steady development continued on each with one rig to a dome. Some encouragement was given this work with the completion of a short lived well on the Caillou Island Dome. This dome and the Four Isle Dome are the only two of the seven domes on which production has not been found except possibly Bay St. Elaine, on which the production is on gas. On the latter, a deep sand was found at 5,175 feet in No. 4 State but it tested salt water and the hole is being deepened. The gas production at this dome was found in shallow sands.

Considerable interest at various times this year has been centered on Vacuum Oil Co.'s wildcat, No. 1 Cameron Meadows, Section 21-14s-13w. This test, the first drilled on this geophysical prospect in almost virgin territory, has encountered a series of oil sands, the first being found at 1,275 feet. Although these sands have failed to prove up commercial production yet the existence of a good field is indicated. The test now

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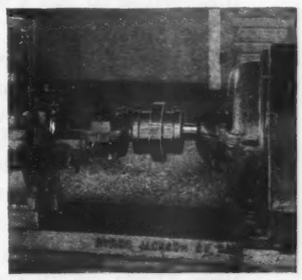

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A summary of the work which was done on the Gulf Coast the first six months of the year is shown in the following tables:

GULF COAST

Texas

Field—	Comp.	Prod.	Abd.	Gas
Barbers Hill	62	53,606	6	0
Batson	13	87	5	0
Big Creek	7	2,470	4	0
Blue Ridge	11	1,622	2	0
Boling	6	130	3	0
Clay Creek	7	375	4	1
Damon Mound	2	500	1	0
DeWalt	11	5,954	0	1
Esperson	15	8,532	1	1
Fannett	6	400	4	0
Goose Creek	8	420	5	0
High Island	4	6,140	0	0
Hankamer	6	4,770	1	0
Hull	26	10,324	3	1
Humble	46	37,659	9	1
Liberty	12	751	6	0
Lost Lake	6	715	4	0
Nash	1	0	1	0
North Dayton	4	3,315	1	0
Orange	4	180	0	0
Orchard	3	3,850	0	0
Pierce Junction	23	8,915	7	0
Raccoon Bend	29	6,805	2	1
Port Neches	1	2,000	0	0
Refugio	108	44,371	21	12
Saratoga	15	94	7	0
Sour Lake	13	240	5	0
Spindletop	41	16,506	11	2
West Columbia	3	250	2	0
Miscellaneous	48	1,034	43	2
First 6 months 1930	541	222,015	158	22
First 6 months 1929	582	223,227	195	11
Difference	41	912	37	11

South Louisiana

Field—	Comp.	Prod.	Abd.	Gas
Anse La Bute	2	0	1	0
Bayou Blue	5	545	2	0
Bayou Bouillon	4	1,680	3	0
Edgerly	9	173	5	0
Hackberry	19	2,675	12	0
Jennings	8	2,093	5	0
Lockport	5	1,280	1	0
Port Barre	9	7,350	2	0
Sorrento	3	700	1	0
Starks	5	776	0	0
Sulphur	9	15,005	3	0
Sweet Lake	1	300	0	0
Vinton	11	6,077	3	0
Welsh	1	15	0	0
Miscellaneous	41	4,609	36	0
First 6 months 1930	131	43,278	74	0
First 6 months 1929	200	34,995	111	3
Difference	69	8,283	37	3
Total Gulf Coast—				
First 6 months 1930	672	265,293	232	22
First 6 months 1929	782	258,222	306	14
Difference	110	7,071	74	8

Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	125	58,958	46	6
February	82	34,385	27	3
March	126	55,993	41	4
April	130	39,812	50	2
May	124	45,786	42	3
June	85	31,259	26	4
Total	672	265,293	232	22

DEVELOP ONE NEW POOL IN NORTH LOUISIANA

(Continued from Page 151)

Carterville, Sarepta and even the semi-proven and settled Urbana district, being old territory. It was the climax of two years' exploration of that part of the parish by R. O. Roy in the course of which he had drilled half a dozen wells of which only one, No. 1 Fuller, in Section 6-13-13, was successful, a 20,000,000-foot gasser, total depth 2,827 feet. Completion was in October, 1928, and the other wells which located and defined the subsequent producing area followed at rather long intervals until the discovery well, No. 1-E Farmer, in the NE NW, Section 5-13-13, was completed March 9, flowing at the rate of 2,700 bbls. of 37.9 gravity crude from 2,880 feet, total depth, production coming from the Woodbine, the same sand that was so prolific over so wide an area in Caddo Parish and also in Elm Grove.

There was no immediate result of the strike so far as drilling is concerned for Roy owned all the acreage for several miles around the well and ceased all activity during negotiations for its sale. A large part of his block and the well was bought by the Standard Oil Co. of Louisiana for a price never officially revealed but which was reported to have been over $2,000,000, part cash and part out of the first production, plus an overriding royalty. Immediately the trade was concluded the Standard proceeded with an extensive drilling program which included fulfillment of drilling clauses in several of Roy's leases. Since then the Standard has drilled 15 wells only 3 of which have been successful. Holly was a worse disappointment than the Dixie district of Caddo Parish which flourished during a brief two or three months last year. A ring of dry holes and salt water wells surrounding the three closely grouped producers has fairly well limited producing territory to the north half of the discovery section, and even in this 320 acres there is a dry hole almost offsetting the producers. In all, there have been 24 completions in the district, four producers with a total initial production of 6,100 bbls., five gas wells with a total of 22,000,000 feet, open flow, and 15 failures. As this is written three wells are producing 1,549 bbls. and total production approximately 60,000 bbls.

Developing Zwolle

Although they had developed more or less production in the Blue Lake area—the western extremity of that 12-mile strip of territory embraced in what has come to be known as the Zwolle district, during the previous few months, Zowlle proper was not opened until November, 1929, when R. L. Gay of Zwolle and W. E. Cook of Paterson, N. J., completed No. 1-A Bowman-Hicks, in Section 34-8-12, 3 miles east of the town of Zwolle, flowing 2,500 bbls. of 41.5 gravity oil from 8 feet of sand in a crevice of the chalk rock at 2,413 feet. This flow was through a one-quarter-inch choke and the well was estimated good for as high as 7,000 bbls. wide open.

The owners in this area followed the same course as those in the Holly district — there wasn't any activity until after Cook and Gay sold their 10,000-acre "Loring block" and the well to Benedum & Trees for $3,000,000. The purchasers formed the Loring Oil Co. under which title all their subsequent North Louisiana activities have been carried on. Development began in January and for a while derricks grew rapidly, especially after Lide and others brought in No. 1 Sabine Lumber Co., in Section 31-8-12, making an estimated 5,000 bbls., total depth 2,204 feet. Since the discovery well 36 dry holes have been drilled in Zwolle district proper—on the east end of the 12-mile structure—and 30 producers (as of June 30) which had a total initial production of approximately 13,000 bbls. and were producing 3,090 bbls. as this is written.

While it has not been the utter disappointment Holly has turned out to be to date, Zwolle has not met expectations. Production is coming from crevices in the chalk rock and the chance of hitting one of these crevices has been at long odds. With few exceptions wells have been small and it has happened more than once that completion of a new producer has caused a sharp drop in the output of adjacent wells and twice numerous wells have gone dead simultaneously. Brought back to production their output thereafter has been uniformly much smaller than before. As there is very little gas pressure, 60 pounds average for the field, producers that flowed did so naturally for only a limited period, and most of the wells did not flow at all.

Long and Narrow

Proven area of Zwolle proper has been confined to a strip 4 miles long and a mile wide with the majority of completions crowded into Section 31-8-12. The other sections in the strip, 32, 33 and 34, have been sparsely drilled and there is plenty of room left. The Lide well referred to was the first extension and was 2½ miles west of the discovery well. A mile and a half north of the discovery, A. H. Tarver completed two small producers in Sections 26 and 27-8-12. Ohio Oil Co.'s No. 2 Bowman-Hicks, in Section 33-8-12, and Loring Oil Co.'s No. 7 Bowman-Hicks, in Section 4-7-12, were small extensions south. Four miles east of the discovery well, Pelican Natural Gas Co. completed a small producer in No. 1 Louisiana Long Leaf Lumber Co., in Section 4-7-11, at 2,446 feet. As a rule Zwolle producers have been completed at various depths between 2,400 and 2,600 odd feet, but trying to figure where a break in the chalk may be reasonably expected is impossible. Operators drill in

the dark as to this detail and the only safe plan is constant coring and reaming. Some wells have been completed in the marl overlying the chalk at depths ranging from 2,100 feet to around 2,300 feet.

To date, owing to the depths necessary to be reached, the expense and the overproduction situation in the industry, there has been little prospecting for deeper and more dependable producing formations, but such work is expected as a feature of activities the latter half of the year. The three deep tests so far drilled in Zwolle have not produced as yet. The first to be completed, W. G. Gray's No. 1 Knowlton, in Section 6-7-12, drilled to 4,010 feet where it tested salt water, but before it was abandoned it was plugged back to 3,600 feet where there had been a show of oil and gas, but a second test at this level failed to develop anything. Ohio Oil Co. drilled No. 3 Bowman-Hicks, Section 32-8-12, to 2,550 feet where it had 8 feet of sand. It was shot without results, drilling on to 2,990 feet where it got salt water. Warner-Quinlan Co. drilled No. 1 Peterson, a wildcat in Section 26-8-13, 1½ miles northwest of production, to 3,000 feet without getting a show of anything but salt water, and No. 1 Sabine Lumber Co., in Section 34-8-12, tested dry on a show of oil at 2,495 feet and salt water at 2,730 feet.

Loring Oil Co. is coring hard lime at 4,000 feet on No. 5 Bowman-Hicks, Section 34-8-12, a scheduled 6,000-foot test in search of production in the Blossom or deeper sands which have so far failed to make good on any show. Sandy shale at 3,200-05 feet showed a little oil, and sandy lime at 3,578 feet had a little gas in it. From 3,915-25 feet it cored a porous lime showing considerable saturation and with the oil show considerable gas but failed to develop anything beyond the show when bailed. No. 1 Peavy-Wilson, a wildcat in Section 21-6-13, 10 miles south and half way between Zwolle and Blue Lake production, another 6,000-foot test, topped the Blossom at 3,535 feet but has failed to get a show anywhere along the log down to 4,100 feet where it is coring shale and lime.

Carterville a Good Find

Carterville, without any fuss having been made over it, has developed as one of the most remarkable pools of this division. It was first drilled as a gas field in 1927-28, passed out of the picture with depletion of the 2,900-foot horizon, and came back again in 1929 as an oil-producing area from a new sand 100 to 150 feet lower. In its early development one or two wells were completed but they were not particularly long lived and it was not until September last year that much attention was paid the field. In that month an old gas well, deepened to around 3,900 feet and plugged back to 3,100 feet, was completed making 100 bbls. by heads from 3,170 feet. Immediately, operators began to sit up and take notice and since the first of this year, when the new development reached its stride, 73 wells have been completed of which 54 were producers and 19 failures. Average initial production of these wells was 186 bbls., the crude running close to 44 gravity. Present production from 45 wells averages 65 bbls., or 2,910 bbls. for the field, and total production to June 30 is estimated at 702,978 bbls.

As a gas field, Carterville was developed as a rectangle, approximately 2 miles wide and 8 miles long, extending from Section 16-23-12, southeast to Section 38-23-11, with a break plainly discernible in the southeast half of Section 23-23-11, dividing it in two practically equal parts. Present development has been confined to the lower half in which proven territory occupies approximately 2,000 acres, on which there are 21 operations under way. Farther east, across the Bossier-Webster Parish line marking the southeast end of Carterville, there is another comparatively vacant strip in which a few gas wells have been drilled and east of that is the Sarepta district of Webster Parish. Proximity of the two pools, with only this narrow strip between is responsible for the area being frequently referred to as one, the Sarepta-Carterville district and it is so listed in figures showing the daily average pipe line runs of oil from this division.

Sarepta, like Carterville, is an old gas field lately redeveloped for its oil, production of which is included in the figures for the Carterville Pool. Connection of the two fields, Carterville and Sarepta, appears, however, to be only geographical as they produce from entirely different horizons, the one from between 3,100 and 3,200 feet, and the other from between 2,700 and 2,800 feet, and the oil is 32 gravity. However, operators are considering the possibilities of a deeper pay and wells to prove the theory one way or the other may be expected, possibly during the ensuing year.

Discovery of the field dates back to the early years of the century and its systematic development as a gas field was done by Magnolia Petroleum Co. up to 1923, since when approximately 70 wells have been completed, 17 of them producers with an initial production of 1,550 bbls. and 32 gas wells with an open flow of 856,000,000 feet. As of June 30, 10 wells were producing an average of 57 bbls. daily. The first recent test to go below the 2,700-foot horizon, at which it had salt water at 2,760 feet, was J. S. Martin's No. 1 Taylor, in Section 36-23-11, abandoned at 3,100 feet as a salt water hole. Most of the wells make considerable water with the oil. Producing acreage has not been defined and Sarepta, with Carterville, will probably remain one of the active areas of this division during the remainder of the year, there being 18 operations under way at the end of the half year, as the result of what might be called the discovery well of the redevelopment which was completed about three months ago. Thirteen of the 17 producers have been drilled since then.

Gas Fields Active

As the result of trunk pipe line construction to the north, east and west during the last half of 1929, Monroe and Richland gas areas have been particularly active in order to have sufficient reserve gas to supply this additional demand for fuel, a demand which is continually increasing as laterals are laid from these trunk lines to supply more and more communities in the nine states reached by the lines, Louisiana, Arkansas, Texas, Missouri, Illinois, Tennessee, Mississippi, Alabama and Georgia. Maximum pull on any one well is graduated according to the acreage on which it is located, the maximum allowed by the State Department of Conservation being 24 per cent of the open flow. This maximum is for one well on 80 acres and the schedule grades down to 7 per cent for one well on 5 acres.

A total of 107 wells was completed in the two fields during the first half of 1930, 88 of them producers with a total open flow of 1,737,524,000 feet and 19 failures. Richland produced 54 of these, 42 of them having a total open flow of 1,339,701,584 feet; and the Monroe Field 53, of which 46 had an open flow aggregating 397,822,512 feet. In the Monroe Field, Morehouse Parish was the location of 12 completions of which 11 were wells with an open flow of 231,368,972 feet of gas; Ouachita, 28 wells of which the 23 producers had 118,624,000 feet open flow, and Union Parish 12 wells with 47,829,540 feet and one failure.

Wildcatting in Gas Region

Practically all of this work was well within proven territory, extensions being for only a few hundred feet in any direction. Wildcatting was scarce, two attempts in Richland about summarizing such activity. Triangle Drilling Co. junked No. 1 Compton, Section 16-17-7, 5 miles northeast of the northeast corner of proven territory, at 2,889 feet, three tests between 2,310 feet, and total depth being dry or salt water with no gas showing in either case. Woodley Petroleum drilled 3,280 feet on No. 1 Buie, in Section 32-18-7, 6 miles northeast of the farthest north production in the field in Section 16-17-6, salt water at 2,485 feet being the only other test. There was, however, more or less wildcatting of another sort in Monroe, tentative exploration of the Monroe second sand in which Magnolia Petroleum Co. had developed two gas wells in 1929. Both of these were Magnolia Petroleum Co. completions in Morehouse Parish, and were followed during the first two or three

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months of the year by one or two small wells and in April by another Magnolia completion gauging 18,000,000 feet of gas at 2,363 feet, this having been No. 8 United States Government, in Section 33-21-5, Morehouse Parish, to which division of the field this second sand exploration has been practically confined. Two or three weeks later, Louisiana Gas & Fuel Co. completed No. 27 Crossett, Section 42-21-5, which gauged 37,000,000 feet of gas at 2,384 feet. The climax, so far, of this development was reached June 13 when Hope Production Co. completed No. 2 Fairbanks in Section 25-20-4, Ouachita Parish, at 2,301 feet, gauging 53,500,000 feet of gas. As an anticlimax, Union Gas Products Co.'s No. 1 Hare, in Section 22-19-5, Ouachita, was abandoned at 2,565 feet, frequent tests from the 6-inch casing at 2,265 feet on down being dry. With one or two exceptions no drilling for possible deeper production has been done in Richland since Hope Production Co. completed No. 1 Eubanks, Section 26-17-6, at that time a wildcat, at 2,942 feet. It had been dry in the 2,450-foot horizon whence Richland is producing, and gauged 7,653,000 feet at 1,260 pounds on completion.

Existence of the Monroe second sand has been known for several years and there has been some prospecting of it prior to the present instance, but energetic development of its possibilities will remain for the future as long as the upper pay and Richland proven areas continue to produce at the rate they do—and Richland is far from drilled up with plenty of room left for many wells in Monroe.

Through consolidations effected during the last six months 80 per cent of the total area of Monroe and Richland proven territory plus much wildcat acreage has passed into the hands of one or two giant combinations which also own two of the seven major trunk lines out of the territory and probably have substantial interests in as many or more of the others.

Future Explorations

Mississippi, more especially the area in Hinds and Rankin Counties immediately adjacent to the city of Jackson, the Sugar Creek district of Claiborne Parish, Louisiana, southeast of Homer, Sarepta in northwestern Webster Parish and the country around the common corner of Concordia, Catahoula and Tensas Parishes in East Central Louisiana, loom as the likeliest locations for centers of drilling activity during the remainder of the year. This because of the discovery of gas in commercial quantities in the Jackson district and in northern Concordia Parish; discovery of gas in the deeper horizons of the Trinity group in Claiborne Parish, the production already obtained and the vacant territory in the Sarepta district remaining to be proved. Zwolle and Carterville districts in Sabine and Bossier Parishes and possibly Holly in DeSoto will continue active and there is some likelihood that Urbana in southeastern Union County will be further explored.

The southeastern half of Carterville is fairly well drilled up and limits of productive acreage also have been pretty well defined but in the northeastern end there has not been sufficient deep drilling to thoroughly demonstrate whether production will be obtained in the 3,100-3,200-foot horizon. One or two tests have been made during the current redevelopment of the field with negative results. Sarepta still is in process of development as an oil pool and its extent is by no means defined. The trouble there, which has rather put the brakes on, is chiefly the relatively large volume of water all wells so far completed have made with the oil.

There is much vacant acreage within the defined limits of Zwolle remaining to be drilled and while the district has rather slumped in popular estimation it probably will remain active for some time to come. The same applies to the Blue Lake division of this district which took second place when the Zwolle discovery well followed up. There is some activity in that part of Sabine Parish in the way of geophysical work that may decide whether to drill or not. Holly district of DeSoto Parish turned out to be another Dixie disappointment only more so, the result having been four producers and five gas wells from 25 completions. Urbana, except for the two or three wells that are producing as much or more water than they are oil is practically an unknown quantity as to probable area and possible results. With its past history of gas wells that were quickly drowned out it is not any too promising.

Leasing in Central Louisiana

There appears to be a great deal of interest in the possibilities of Central Louisiana from the Texas line to the Mississippi River, a dozen or so major companies having gone in for options on large tracts for geophysical work and, in some cases, having leased generously.

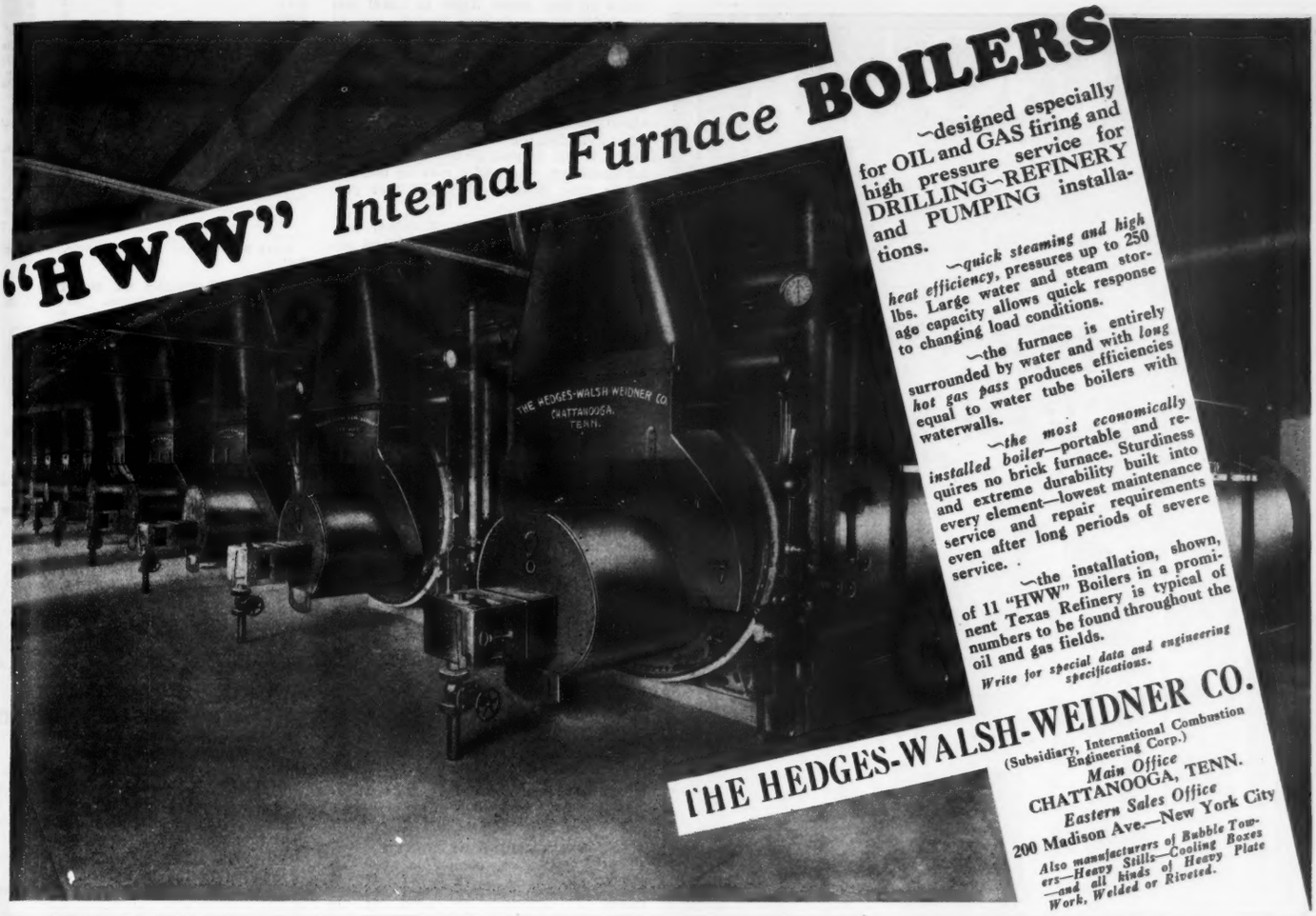
Wildcatting was more general than was anticipated, the Louisiana Conservation Department's records showing considerably more permits for new work during the first half year than for the corresponding period of 1929, and while these figures cover the entire State, North Louisiana was far more active than the Coastal parishes. There is no reason to expect a falling off for the last half of the year and drilling in proven and wildcat territory will no doubt remain at least on the present scale.

Mississippi, as the result of the Jackson gas wells, of which there were five at this writing, will take a more important place, regaining the prestige it has lost during the last two or three months as the result of several major companies recalling geologists, scouts and land men they had maintained there for some time during the last two years. The Arkansas Valley in northern Arkansas apparently will be neither more nor less active than it is now and there is nothing on the horizon at this time to indicate any great activity in the older and better known southern part of the State.

Old Areas Gone Over

The entire North Louisiana-South Arkansas belt has been so thoroughly prospected during the last 10 or 12 years—and before—that there appears little likelihood of any new pools in the shallower sands. Consequently it is to the deeper formations, particularly the Trinity group, that operators must look in the future, and this requires the attention of well-financed organizations. Here again it is Sugar Creek with possibly Sarepta, Holly, Cotton Valley and Zwolle that are the most likely areas to be explored. Deep gas at Sugar Creek has already been proved by the Triangle Drilling Co.'s two producers at around 4,500 feet. Possibility of production below the old deep level of 4,800-4,900 feet in Cotton Valley was strongly indicated by Magnolia Petroleum Co.'s McCook & Hibbler, in Section 22-21-10, Webster Parish, which had a good oil show with some gas at 6,965 feet, but was lost as a junked hole at 7,000 feet. The deeper sands underlying present production from 2,700 feet in Sarepta also have not been explored but some of the best geological talent in this division has rather emphasized the wisdom of deeper drilling in that area. Whether anyone will venture deeper in Holly remains to be seen. Present drilling has been to 2,800-2,900 feet with three wells to 3,000 feet and slightly below, one of which, a wildcat, was a 40,000,000-foot gas well. Three wells, scheduled to go 6,000 feet, are under way in Zwolle and whether drilling below the present 2,500-2,700-foot level is indulged in on a large scale depends upon the results obtained. The one deep test so far completed in that territory during the current development was a failure at 4,000 feet. Showings in the deep wildcat being drilled by R. W. Norton in the northwest corner of Caddo Parish have been such as to raise hopes and should he get either gas or oil several more wells no doubt will be started in that territory. His present depth is 5,330 feet with 6⅝-inch casing cemented at 5,165 feet to test a gas show in 40 feet of oolitic lime at the bottom. The southern flanks of the Bellevue Dome in Bossier Parish also may turn out to be an active locality during the remainder of the year as the result of the gas obtained by H. I. Morgan at around 1,850 feet.

Benedum & Trees interests drilled a



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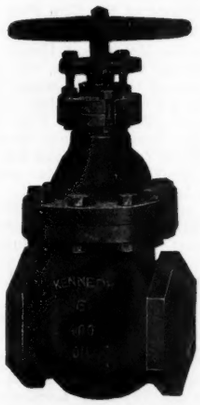

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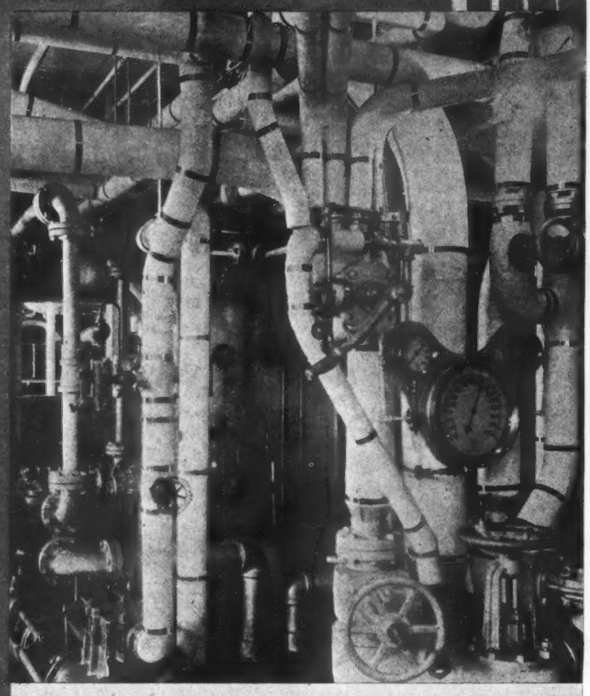

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series of deep holes, 3,000 to 3,600 feet in southwestern DeSoto Parish, one of which resulted in commercial gas at 3,000 feet but the strike has not been followed up so far. This particular well was finished by Arkansas Natural Gas Corp. which also drilled to 6,400 feet in the Urania district of LaSalle Parish. This well, No. 5-F Urania, in Section 24-10-1e, is the deepest drilled in northeastern Louisiana and tested nothing but salt water after passing the 1,500-foot producing horizon.

Concerted development of deeper production in the Monroe and Richland gas fields is not apt to follow, in the immediate future, the few completions having been completed in the Monroe second sand at around 2,300 feet and the one 2,900-foot producer in Richland. There is no necessity for it and the outlook now is that there wont be for at least another year or two.

NORTH LOUISIANA

Completions by Parishes First 6 Months of 1930

	Comp.	I.P.	Dry	*Gas
Bienville	0	0	0	1
Bossier	85	10,015	30	3
Caddo	53	2,150	12	5
Catahoula	1	0	1	0
Claiborne	2	0	1	1
DeSoto	22	6,100	14	5
Franklin	2	0	2	0
LaSalle	9	55	7	0
Morehouse	12	0	1	11
Natchitoches	1	0	1	0
Ouachita	28	0	5	23
Red River	3	17	1	1
Richland	54	0	12	42
Sabine	73	13,272	36	2
Union	13	0	1	12
Webster	23	745	10	3
West Carroll	2	0	2	0
Total	384	32,354	136	109

*Gas production: Bienville, 41,500,000 feet; Bossier, 46,319,000 feet; Caddo, 40,154,000 feet; Claiborne, 1,500,000 feet; DeSoto, 30,000,000 feet; Morehouse, 231,368,972 feet; Ouachita, 118,624,000 feet; Red River, 3,500,000 feet; Richland, 1,339,701,584 feet; Sabine, 43,800,000 feet; Union, 47,829,540 feet; Webster, 36,146,000 feet; total 1,977,443,096 feet.

COMPLETIONS BY MONTH

	Comp.	Prod.	Dry	Gas
January	50	517	12	23
February	39	8,894	13	11
March	58	6,905	21	10
April	73	4,771	27	18
May	69	5,821	23	22
June	95	5,346	40	25
Ttl. first 6 mo. 1930	384	32,254	136	109
Ttl. first 6 mo. 1929	231	5,415	74	114
Difference	153	26,839	62	5

ARKANSAS

Completions by Counties, First 6 Months of 1930

	Comp.	I.P.	Dry	*Gas
Ashley	1	0	1	0
Clark	1	0	1	0
Grant	1	0	1	0
Logan	1	0	1	0
Johnson	1	0	0	1
Madison	1	0	1	0
Ouachita	22	429	9	0
Pope	3	0	2	1
Prairie	1	0	1	0
Sebastian	1	0	0	1
Union	40	1,869	23	1
Washington	1	0	1	0
Total	74	2,298	41	4

*Gas production: Johnson, 25,000,000 feet; Pope, 4,747,000 feet; Sebastian, 4,000,000 feet; Union, 50,000 feet; total, 33,797,000 feet.

COMPLETIONS BY MONTHS

	Comp.	Prod.	Dry	Gas
January	12	711	5	0
February	8	181	4	0
March	15	212	8	0
April	16	1,085	9	1
May	8	37	6	0
June	15	72	9	3
Ttl. first 6 mo. 1930	74	2,298	41	4
Ttl. first 6 mo. 1929	137	15,225	70	13
Difference	63	12,927	28	9

EAST TEXAS

Completions by Counties, First 6 Months of 1930

	Comp.	I.P.	Dry	*Gas
Harrison	1	0	0	1
Marion	1	0	1	0
Panola	19	0	1	18
Red River	1	0	1	0
Total	22	0	3	19

*Gas production: Harrison, 5,514,000 feet; Panola, 57,109,000 feet; total, 62,623,000 feet.

COMPLETIONS BY MONTHS

	Comp.	I.P.	Dry	Gas
January	5	0	1	4
February	2	0	0	2
March	3	0	0	3
April	4	0	0	4
May	2	0	0	2
June	6	0	2	4
Ttl. first 6 mo. 1930	22	0	3	19
Ttl. first 6 mo. 1929	48	40	11	35
Difference	28	40	8	16

MISSISSIPPI

Completions by Counties, First 6 Months of 1930

	Comp.	I.P.	Dry	*Gas
Hinds	3	0	1	2
Monroe	1	0	1	0
Rankin	1	0	1	0
Yalobusha	1	0	1	0
Total	6	0	4	2

*Gas production: Hinds County, 30,569,920 feet.

COMPLETIONS BY MONTHS

	Comp.	I.P.	Dry	Gas
January	2	0	2	0
February	0	0	0	0
March	0	0	0	0
April	3	0	1	2
May	0	0	0	0
June	1	0	1	0
Ttl. first 6 mo. 1930	6	0	4	2
Ttl. first 6 mo. 1929	16	0	16	0
Difference	10	0	12	2

ALABAMA

Completions by Counties, First 6 Months of 1930

	Comp.	I.P.	Dry	Gas
Sumpter	1	0	1	0
Total	1	0	1	0

COMPLETIONS BY MONTHS

	Comp.	I.P.	Dry	Gas
April	1	0	1	0
Ttl. first 6 mo. 1930	1	0	1	0
Ttl. first 6 mo. 1929	1	0	1	0
Difference	0	0	0	0

RICH NEW POOLS IN KANSAS CURTAILED

(Continued from Page 157)

tion 31-18-2w, found a hole full of water in the Wilcox sand at a total depth of 3,455 feet. The test offset the No. 1 Larson in the same section which was a chat producer.

Early in March a test extended the production in the Ritz Pool. Shell Petroleum Corp.'s No. 1 Koehn, C NE, Section 12-20-2w, was estimated at 1,000 bbls. from chat at 2,934-74 feet. The McPherson Oil & Gas Co. abandoned its No. 1 in Section 26-20-2w, when water developed in the chat at a total depth of 3,000 feet. The test had a showing of oil at 2,995 feet. It was located southwest of the Ritz Pool.

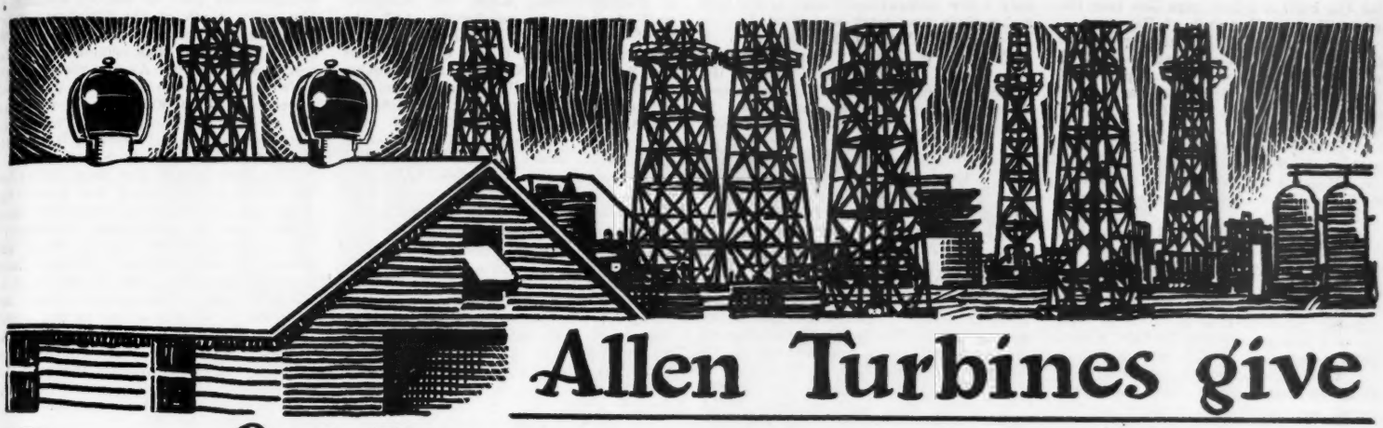
The possibility of opening a new producing area in McPherson County, the fourth in the last few months, was bright when the test of the Mid-Kansas Oil & Gas Co., No. 1 Pitts, in Section 2-19-2w, 6 miles north of the Ritz Pool, made 120 bbls. the first 20 hours from the chat at 2,964-72 feet. The gas was estimated at 2,000,000 feet. It later swabbed 350 bbls. in 24 hours.

Another wildcat test in McPherson County, by Helmerich & Payne southwest of the Voshell Pool, was a failure and was abandoned after finding a hole full of water in the Wilcox sand. The test was located in the NW cor. NE NW, Section 22-21-3w, and was abandoned at a total depth of 3,405 feet.

Opening of Schurr Pool

The Schurr Pool was opened in July, 1929, by Slick, Pryor & Lockhart and others' No. 1 Schurr, NE cor. SW, Section 21-20-10w, Rice County. This well made 148 bbls. of 54 gravity oil the first 24 hours from sand at 3,278-82 feet. Other offsets were started but it was not until February, 1930, when the Producers & Refiners Corp.'s No. 1 Mezger, SE cor. NW, Section 21-20-10w, the north offset missed production in that sand and was drilled to the Silicious lime at 3,296-3,303 feet, where it made 430 bbls. the first 19 hours, that the area was considered important. The other offset wells were soon completed and the potential production was estimated at 7,000 bbls. a day.

The area was without a pipe line and the pipe line companies gave the operators little encouragement, owing to the limited market for crude oil. It was decided to allow the wells in the pool to produce as much as the pipe companies could handle. The Independent Oil &



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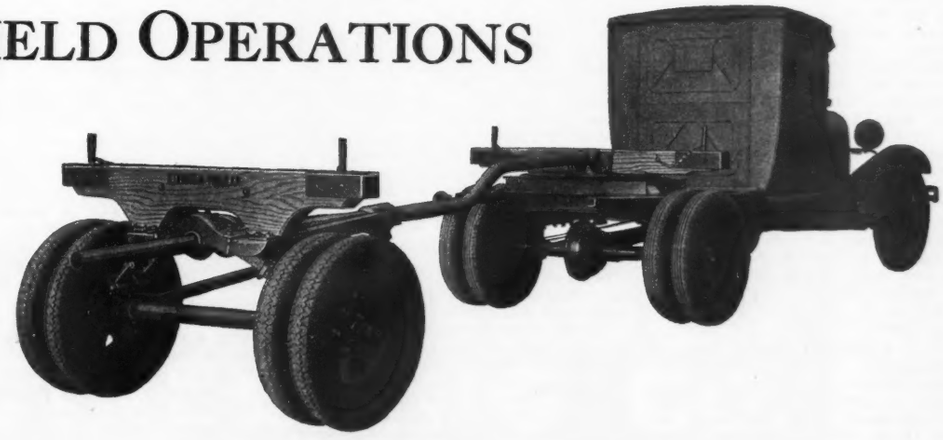

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Gas Co. built a 3-inch pipe line into the area with a loading rack at Raymond.

Operators decided that new operations would be limited to one test on each 80 acres, and when completed a period of 15 days was permitted to swab each well to establish its potential before it was put to pumping.

A wildcat test drilled about 5 miles south of the Schurr Pool was found to be dry. Boucher Oil Co.'s No. 1 in Section 16-21-10w, Rice County, was abandoned at 3,350 feet.

Allison & Fitzwilliam and others' No. 1 Mezger, SW cor. SE NE, Section 21-20-10w, extended the production a quarter mile east. It was completed May 10 and made 745 bbls. in nine hours from the Silicious lime at 3,353-66 feet. The well was prorated to 50 bbls. a day.

The completion of this well led to a town lot drilling campaign on the townsite of Raymond, where three tests were started and were still drilling at the close of the first half of the year.

Sedgwick Comparatively Quiet

Sedgwick County which was in the limelight the previous year was quiet during the first six months of the year. The pools had been developed and the wildcatting resulted in failures. The deepest test drilled in the county was abandoned as a dry hole at 5,012 feet the last week in January. It was drilled on the west side of the Valley Center Pool by J. S. Cosden Co., No. 1 De Weiss, NE cor. W half SW, Section 1-26-1w. Production test was made in the Simpson sand at 3,360 feet, where it made 5 bbls. of oil a day. Another small showing of oil was found in the Silicious lime at 3,396 feet.

The northern extension to the Valley Center Pool was a disappointment. Several dry holes were completed in February. Slick, Pryor & Lockhart and others' No. 5 Smyser, SW cor. SE, Section 36-25-1w, Sedgwick County, had a hole full of water at 3,418 feet. It was the fourth dry hole completed on the lease.

New Producing Areas in Greenwood

Two new producing areas were opened in Greenwood County in February on the east side of the county. Prairie Oil & Gas Co.'s No. 1 Moran, in Section 16-24-12, found oil in the Bartlesville sand at 1,578-1,603 feet. The well was estimated at 75 bbls. a day and was located southeast of the Patterson Pool. The other was the Derby Oil Co.'s No. 1 Beevers, NW cor. SW SE, Section 25-24-12, a wildcat test to the east of production, swabbed 100 bbls. in 22 hours from the Bartlesville sand at 1,618-57 feet. It is located about 2½ miles southeast of the Prairie Oil & Gas Co.'s well and opened considerable territory for development.

In March considerable activity resulted from a new well completed by the Syndicate Oil Corp. in the Patterson Pool, in Section 6-24-12, Greenwood County, which made 240 bbls. in 10 hours. The companies announcing new locations near the well were Prairie Oil & Gas Co. with two locations and the Empire Oil & Refining Co. with a new test to the north of the well.

The Clark Pool in Greenwood County was extended in April by G. F. O'Neil and others' No. 1 Harlin, NE cor. NW NW, Section 34-22-11, which swabbed 190 bbls. a day from the Bartlesville sand at 1,865-1,910 feet.

Community Test

A community test was started in the Haverhill district, one of the first ever attempted in Butler County. The companies interested in the test were the Empire Oil & Refining Co., The Texas Company, and the Phillips Petroleum Co. The location was in Section 33-27-7, Butler County, and was drilled in an attempt to find the trend of production in the Haverhill Pool.

National Refining Co. announced a new wildcat location on a block of 6,000 acres in northern Butler County in March. The test was No. 1 Snively, NW cor. SW, Section 25-23-6, and was started to test the Bartlesville sand horizon. It was later found to be dry and abandoned at 2,965 feet. From the middle of April to the end of June development in Butler County slowed down and only a few wildcat tests were under way and a little new work was started.

Deeper Pays in Elk County

The last of January found northern Elk County in the eastern part of the State receiving attention of oil operators. A new deeper sand was uncovered in Section 9-29-9, Elk County. The discovery well made 70 bbls. a day and resulted in the starting of considerable new work. The oil was found in the Simpson sand at a total depth of 2,641 feet, a new depth for oil in the area. Another new producing horizon was found in the same county when the test drilled by Ramsey Hunt Co.'s No. 1 Denton, NW cor. NE NW, Section 10-31-8, Elk County, started making 50 bbls. a day from 1,658-71 feet. It was the first commercial production found in the Grenola area in this horizon, and was about 250 feet above the Kansas City lime.

The first test drilled to the Kansas City horizon was the Minnehoma Oil & Gas Co.'s No. 5 Denton, CNL SW SW, Section 3-31-8, Elk County. The well made 20 bbls. an hour at 1,920-50 feet. Several wells were drilled to the formation and operators were recovering about 1,000 bbls. a day from wells completed in that horizon. These new producers resulted in considerable new work.

Ramsey, Barker and others' No. 1 Denton, NW cor. NE NW, Section 10-31-8, Elk County, in the County Line Pool, found oil in the Silicious lime at 2,663 feet in March. The well was estimated at 75 bbls. a day. It had been producing 20 bbls. a day from a total depth of 1,972 feet. It was the first test drilled to that depth in the area.

Oil in Wyandotte County

Oil was found on the Wyandotte County poor farm in February. A test was drilling for water when the oil was found at 410 feet. It was estimated at 10 bbls. a day. The county commissioners later decided to lease the poor farm and several other wells were drilled which developed small production.

Successful Deep Work in Montgomery

Montgomery County had several wildcat tests that resulted in producers. The week ending March 9, McWharter, Black and others' No. 1 in the NW cor. SW, Section 6-34-17, 6 miles north of Coffeyville, was completed in the Wilcox sand making 50 bbls. a day from 1,182-83 feet. The well was located in a shallow gas pool that was developed about six years ago.

The Texokan Oil Co.'s No. 1 in Section 4-33-17, Montgomery County, found oil in the Simpson sand at 1,173 feet. It was estimated at 100 bbls. a day. The well was located in the Bellairs Pool which was opened about five years ago. The same company's No. 1 Coleman, in Section 4-33-17, located about 10 miles east of Independence, found oil at 1,168 feet. It was estimated at 150 bbls. a day.

Sumner County was threatened with a new drilling campaign 5 miles northwest of Wellington, in March. A wildcat test by Slick, Pryor & Lockhart had been drilled in that area the last part of the previous year and the owners curtailed the production to about 80 bbls. a day. The well had a potential of about 200 bbls. a day from chat at 3,657-68 feet.

In March operators were moving in rigs offsetting the producer. The discovery well was drilled deeper and found a showing of oil in the Simpson sand at 4,070-85 feet. It was later drilled to the Silicious lime at 4,110-13 feet and had water. The owners, Slick, Pryor & Lockhart, then plugged the discovery well, No. 1 Peasel, NW cor., Section 33-31-1w, back to the chat where it made 80 bbls. a day. The second well completed in the area offsetting the discovery well was Sinclair Oil & Gas Co.'s No. 1 Kamas, SW cor., Section 28-31-1w. It found the chat at 3,667-91 feet and made 182 bbls.

Another wildcat test in the northern part of the county found gas in chat. E. K. Cary and Laredo Oil Co.'s No. 1 Welsh, SW cor. SE, Section 21-30-1w, Sumner County, had 4,000,000 feet of gas at 3,846-60 feet.

The State Line Pool in Sumner County which was discovered last year by the Gypsy Oil Co., and later proved a disappointment when the discovery well declined its production and the south offset was a dry hole. It was again tested by the Gypsy Oil Co. at its No. 2 Enderude, NW cor. SW, Section 16-25-3w. The well was completed the last part of June and was estimated at 1,600 bbls. a day. It made 1,403 bbls. in 21 hours. The new well is the north offset to the same company's No. 1 Enderude in the same section, which is producing 850 bbls. a day, and was the largest producer in the pool before the No. 2 Enderude was completed.

Cowley County

Operations in Cowley County were quiet during the first part of the year and were confined to the proven areas. In March the Biddle Pool, north of Winfield, was extended. Roth & Farout's No. 1 Holt, SW cor. NE SW, Section 12-32-4, swabbed 192 bbls. in 11 hours. The oil was found in sand at 2,588-90 feet.

New Pool in Harvey

A new Harvey County wildcat was estimated at 500 bbls. a day. In April the Shell Petroleum Corp.'s No. 1 Palmer, SW cor. NW, Section 36-22-2w, was gushing over the top of the crown block. The oil was found in chat at 2,970-3,002 feet, where it made 25 bbls. in 3 minutes and then bridged. The best day's production was 375 bbls. with a 200-pound back pressure. The test was located on a core drilled structure and extended production 2 miles from the gas area. It was pinched in and no offsets were started.

Phillips Petroleum Co. in March opened one of its wells in the Shutt Pool, Ellis County, which had been shut in immediately after its completion about six months previous. The well was No. 2 Shutts, SW cor. NE, Section 5-12-17w, and it swabbed 100 bbls. the first seven hours. The oil was found in the Gorham horizon at 3,400 feet.

Russell County

Russell County which has been producing for several years was again in the limelight during the first half of the year. The oil from this county is being transported to a loading rack and is shipped out in tank cars. The development of the Gorham Pool has been proceeding steadily. The second well in the Ochs Pool, in the southern part of the county was completed by the Empire Oil & Refining Co.'s No. 1 Krug, SW cor. NW NW, Section 24-15-14w. The well swabbed 234 bbls. the first 24 hours from the Oswald at 3,354-70 feet.

Gas in Rush County

A large gas well was completed in Rush County, in March. The test was drilled by the Milmac Oil Co., its No. 1 Mohr, C NW, Section 11-18-16w, and was a wildcat. It made 24,000,000 feet of gas from the conglomerate at 3,506-09 feet. The gas volume increased after the well had been drilled deeper into the pay horizon.

The first oil in commercial quantity was found in Barton County March 25, making it the thirty-ninth county in the State to produce oil. Prairie Oil & Gas Co.'s No. 1 Davidson in Section 5-16-11w, found oil at 3,314-40 feet, where it swabbed 200 bbls. a day. Since there is no pipe line in the area the well has been pinched to 50 bbls. a day and was later shut in. The new well was 30 miles north of the Schurr Pool in Rice County and 8 miles east of the Sellans Pool, in Russell County. The test was drilled on a block of 10,000 acres.

Strike in Edwards County

The active drilling campaign started in Edwards County last year was resumed again early in the spring. Three wildcat tests were drilling. These tests were expected to reach the pay horizon in the summer. The last week in March Barnsdall Oil Co.'s No. 1 McCarty, NW cor. NE, Section 31-25-17w, had a showing of oil at 4,530 feet, where the standard tools were rigged up. The test was drilled from 4,530-46 feet, where it flowed 512 bbls. in 24 hours. The well was completed on a 10,000-acre block, and stimulated interest in the western part of the State.

Skelly Oil Co.'s No. 1 Temple Ranch, SW cor. NE, Section 13-34-15w, in the southwestern part of Barber County, a few miles north of the Oklahoma state line, found a showing of oil at 5,241-46 feet. The casing was cemented and the test is shut down. As the result of the showing of oil the company purchased approximately 30,000 acres of leases in the vicinity of the test. It was later abandoned at a total depth of 5,662 feet.

Big Gas Field in Southwest

With two major pipe lines either being built or contracted for across the State the gas producing areas were most active from a development standpoint. The southwestern part of the State had almost 100 tests drilling in Stevens, Morton and Grant Counties at the close of the half year. Other counties which are expected to become active in the search for gas are Clark, Rush, Edwards and Seward. One company has contracted to drill 80 test wells during the year for the purpose of fulfilling a contract that calls for 100,000,000 feet of gas a day for the new pipe line.

The most active area in the southwestern part of the State is the Hugoton gas field, in Stevens and Morton Counties. The gas is found in a horizon at 2,500 to 2,900 feet, the wells averaging about 8,000,000 feet per day. The first gas well was completed in 1927, but at that time there was no outlet for the gas and little activity resulted until the announcement of the pipe line in March. The estimated total capacity of the wells now completed is 75,000,000 feet per day and the additional tests are expected to increase this amount greatly. Very little is known of the geological conditions in the area, the majority of the wells, being drilled by one company and they are withholding the logs and sand cuttings and other geological information.

The announcement in April of a gas pipe line from the Hugoton gas area to eastern Nebraska increased the development in Stevens and Morton Counties. Operations increased from 4 to 50 in May. The first well was completed in 1927, and there being no market for the gas there has been little activity until last year when 10 additional gas wells were completed. In June a total of 95 operations were under way. It is expected one of the drilling wells will test the deep horizons by drilling to the 6,000-foot level. The new tests were being drilled with rotary tools.

The middle of April a large gas well was found in Morton County, the first commercial producer completed in the county, and it makes the fortieth county in the State to produce oil and gas. The well was the Argus Production Co.'s No. 1 Armstrong, C NW, Section 16-34-39w. It blew in making about 20,000,000 feet of gas. The well extended the gas production to the west from the Hugoton gas field in Stevens County, into southeastern Morton County.

The location for the first deep test in the Hugoton gas area was made by the Agate Oil & Gas Co. The test was located in Section 19-33-38w, Stevens County. It was being drilled on a block of acreage about 8 miles south of Hugoton, and it was to test the deeper horizons.

Operators owning acreage in the vicinity are planning to have an open flow of 400,000,000 feet of gas by October 1. The Argus Production Co. is expected to drill 80 tests in the Hugoton gas field during the year. The gas production from the Hugoton gas district is expected to furnish the major part of the gas going into the new pipe line. The company owns about 365,000 acres of leases in Stevens, Morton, Stanton, Grant, and Haskell Counties in Kansas, and Texas County in Oklahoma. Some geologists report the possibilities of finding oil in the deeper formations which may be found from 6,000 to 7,000 feet. No test wells have been drilled to these horizons to confirm the theory.

KANSAS

Summary of wells completed, first six months 1930:

County—	Comp.	Prod.	Dry	Gas
Butler	48	2,030	23	0
Chautauqua	8	85	4	3
Cowley	41	1,021	16	11
Lyon	9	40	7	0

(Table Continued on Next Page)

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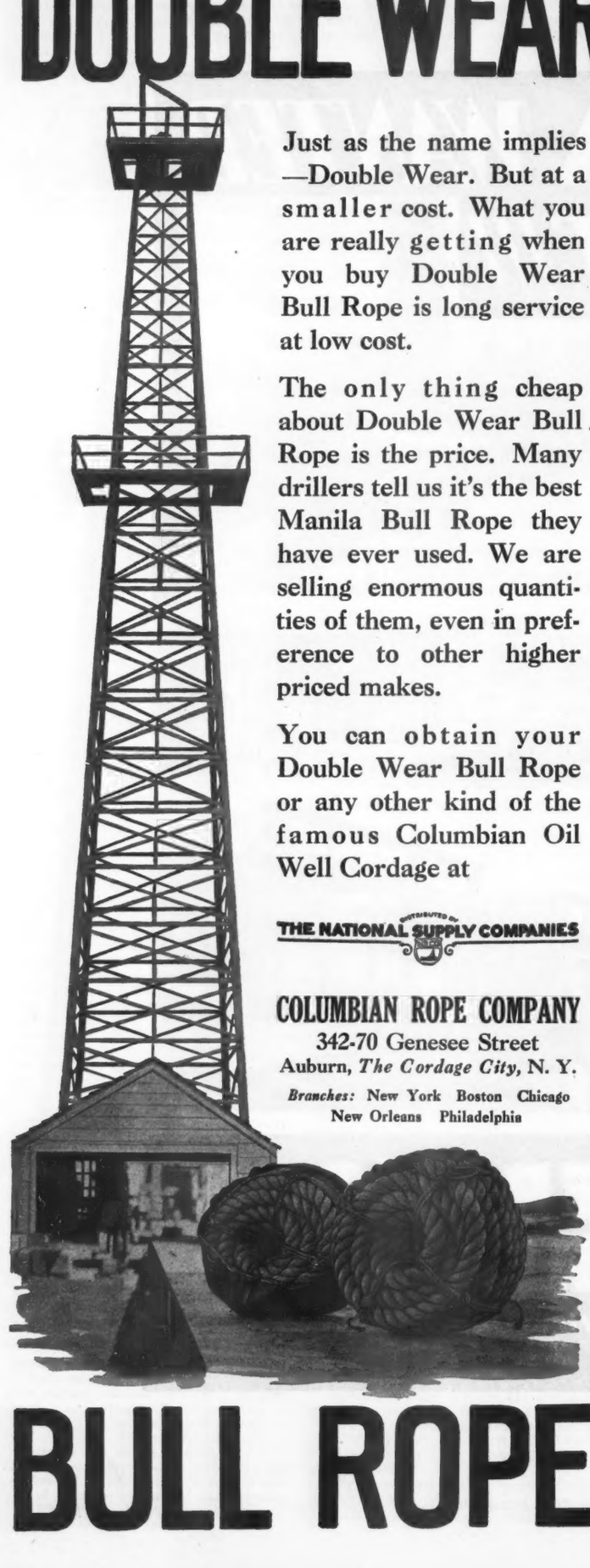

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County—	Comp.	Prod.	Dry	Gas
Barton	2	250	1	0
Douglass	1	0	1	0
Leavenworth	1	0	1	0
Edwards	2	240	1	0
Elk	12	730	7	2
Chase	7	45	5	0
Barber	3	0	2	1
Dickinson	2	0	2	0
Hodgeman	1	0	1	0
Linn	1	0	1	0
Greenwood	81	8,029	26	1
Coffey	15	250	8	1
Rice	9	4,760	3	2
Clay	2	0	2	0
Franklin	1	0	1	0
Pawnee	1	0	1	0
Morton	1	0	0	1
McPherson	119	100,876	20	4
Ellsworth	2	0	2	0
Sumner	17	960	9	2
Kingman	2	0	2	0
Labette	1	0	1	0
Montgomery	4	5	2	1
Stafford	1	0	1	0
Sedgwick	40	7,951	18	1
Morris	3	0	2	1
Ellis	9	863	3	0
Marion	6	175	4	0
Marshall	1	0	1	0
Woodson	5	120	1	0
Stevens	14	0	0	14
Harvey	13	275	11	0
Reno	5	0	4	1
Osborne	2	0	2	0
Riley	1	0	1	0
Trego	4	0	4	0
Russell	7	675	2	0
Rush	2	0	1	1
Pratt	2	0	2	0
Saline	3	0	3	0
Smith	1	0	1	0
Shawnee	1	0	1	0
Washington	1	0	1	0
Total 6 mos. 1930..	514	100,380	217	47
Total 6 mos. 1929..	489	78,523	206	38
Difference	25	22,857	11	9
Summary by Months				
January	64	8,610	42	5
February	59	8,774	27	8
March	93	17,500	44	8
April	85	15,609	33	4
May	108	53,295	34	6
June	105	25,592	37	16
First half 1930	514	100,380	217	47
First half 1929	489	78,523	206	38
First half 1928	624	68,531	225	59
First half 1927	770	62,726	331	40
First half 1926	1,209	88,401	390	54
First half 1925	864	107,407	286	54

SOUTHWEST TEXAS INCREASED OUTPUT

(Continued from Page 160)

There is no indication at this time that the estate expects to immediately develop the property further. The pool is there and is producing into the Humble pipe line, but there is no likelihood that it will add much this year to the already overproduced conditions of the country.

Laredo District

There is much good-looking country in the Laredo district waiting for someone to come in and open a pool. During the first half of 1930 the northeastern part of the county got into the limelight due to the Escobas and Killam-Cuellar Pools, as described above. These two producing spots are surrounded by other production on all sides.

National Oil Co. early in 1930 in its No. 1 Adams got a gas well. The test was shut down for weeks due to lack of water and while shut down it blew in. Then it rained soon after and the company got water and at last reports was drilling at around 1,200 feet. It made quite a little gas when it blew in at 617 feet. It is west of any production in the Laredo district quite a distance and will open something entirely new if it makes any kind of a well. It had such good showings at shallow depths that a great deal is being expected of it.

The Next Six Months

Up to this time 75 per cent of the crude petroleum that has come out of Southwest Texas has been from the pools around Luling and almost all of that from the Edwards lime pools. Pettus may get under headway and upset that. If it produces in anything like the proportions that the Refugio and Raccoon Bend Pools are producing, it will certainly upset the ratio before a great while.

Operators engaged in wildcatting are not unmindful of the big production that has come out of the Edwards lime pools along the Balcones fault but they are more immediately attracted by a new pool and a new discovery than they are by what has happened in the past. There is not going to be any letting down of wildcatting along the Balcones fault but for the next six months the bulk of the attention of wildcatters will be in the counties farther away from the Balcones and nearer the Gulf of Mexico, including the string of counties between the Pettus Field on the southwest and the Raccoon Bend Pool in Austin County on the northeast and in fact extending considerably southwest of the Pettus Field.

There is a possibility that the Pettus Field may prove to be lenticular. Some suspect it at this time, though possibly it is a little too early to say so definitely. If the sands are lenticular, it will not be so good, but there can be a lot of oil come out of the field even if they are. The present condition of the pool indicates to most people that it is going to be a good producer and it is the latest and newest to be developed and naturally everyone who can is going to play that area while it is popular.

All up and down the coast from Corpus Christi there is also to be a continuation of wildcatting. A gas well at 1,700 feet a short distance west of the Saxet gas field and west of Corpus Christi blew out the last of June and cratered and was ruined and choked itself in.

Discovery by the Lion Oil Refining Co. of gas at around 3,600 feet in southern Victoria County in the first well they drilled in Southwest Texas, about 24 miles northeast of the Refugio Field in Refugio County, late in June, is going to have a bearing on development southwest of the Refugio Field. The Agua Dulce gas field in western Nueces County is about 36 miles southwest of the Refugio Field. The three fields are nearly in a straight line.

Of course their being on a straight line on the map doesn't prove that they are on a line geologically though they are about the same distance from the coast line and the trend of things naturally will follow the coast line.

The find by the Lion Oil Refining Co. is simply one more proof that there is production in the counties nearer the coast and will be an argument in favor of tests from Refugio southwest past the Agua Dulce Field.

Wildcatting will be about on a par of activity in these counties near the coast and also along the Pettus-Raccoon Bend line.

Drilling in that territory, however, calls for big rigs and deep holes and big financing. Along the Balcones fault smaller rigs are sufficient for drilling to the Edwards lime, which is the formation most counted on to produce. If a well is not cased, it doesn't cost much to drill. The deepest Edwards lime production is Darst Creek and Joe Bruner Pools at around 2,600 to 2,700 feet. All told, all the wildcat drilling in the whole Balcones fault zone has not cost much thus far and with a total of 67,999,670 bbls. produced from the Edwards lime from three pools, two of them quite young pools, there is quite an invitation to wildcatters to keep hunting for more. Furthermore, the cost makes it possible for many of the smaller operators to wildcat in this territory.

The cost question alone is ample to keep quite a line of wildcatting in the Balcones fault zone and this is lately extending west to Medina County which was very popular two and three years ago.

Production Expectations

At the time this was being written pipe line runs for June were not available, but comparing the first five months of 1929 with the first five of 1930 shows an increase of 226,984 bbls. in the gross production of the fields of Southwest Texas. The total production for the first five months of 1929 was 9,383,096 bbls. and for the first five months of 1930 it was 9,610,080 bbls.

The production table for Southwest Texas for the first six months of 1929, published on Page 119 of The Oil and Gas Journal for July 25, 1929, includes the production from the Refugio Field. This year the Refugio Field is not included in Southwest Texas figures but has been placed among the Gulf Coast Fields. With the production from the Refugio Field excluded the figures show that for the first six months of 1929 the gross crude oil production from Southwest Texas was 11,727,426 bbls. and for the

first six months of 1930 from the same fields it was 12,275,729 bbls.

Pettus Field got into the production columns for the first time in February, but June it reached a daily average of 4,532 bbls. The month of May marked completion of loading racks and the first shipping facilities. With the drilling activity now under way in that field, barring no big disappointments, the production from that field should much more than offset any decline elsewhere. There is considerable new production being developed at this time in the Escobas area in the Laredo district and this with the Pettus Field increase should be sufficient to prevent any decline in the total for Southwest Texas.

Estimated on that basis and leaving the Refugio Field out of consideration Southwest Texas for the full year 1930 should produce about 24,682,000 bbls. as compared with 24,168,987 bbls. for the full year 1929. However, six months is quite a while. There are now 43 tests listed in the Pettus Field and 35 listed in the Escobas and Killam-Cuellar Pools in Zapata County, and the Escobas Pool has just been extended a mile with a well flowing 2,400 bbls. daily. It will be very easy for the Pettus and Escobas Pools to upset calculations and cause Southwest Texas at the close of 1930 to show a very decided increase in production over that of 1929.

SOUTHWEST TEXAS
Completions by Counties First Six Months of 1930

County—	Comp.	Prod.	Dry	Gas
Atascosa	3	0	3	0
Bastrop	8	0	8	0
Bexar	17	39	10	3
Bee	17	6,325	7	2
Blanco	1	0	1	0
Brooks	2	0	2	0
Bandera	1	0	1	0
Caldwell	23	12,173	9	0
Duval	29	1,275	10	8
Dimmitt	2	0	2	0
De Witt	2	0	2	0
Edwards	1	0	1	0
Frio	2	0	2	0
Fayette	2	0	2	0
Goliad	5	0	5	0
Gonzales	10	0	10	0
Guadalupe	196	245,448	51	0
Jim Hogg	7	35	6	0
Hays	1	0	1	0
Jackson	2	0	2	0
Kleberg	1	0	0	1
Kerr	1	0	1	0
Karnes	1	0	1	0
Kinney	2	0	2	0
Kendall	2	0	2	0
Live Oak	4	0	4	0
Lavaca	1	0	1	0
La Salle	1	0	1	0
Maverick	2	0	2	0
Medina	11	5	9	1
McMullen	2	0	2	0
Nueces	3	0	3	0
San Patricio	1	0	0	1
Starr	2	0	2	0
Uvalde	1	0	1	0
Webb	26	700	13	7
Wilson	2	0	2	0
Williamson	8	1,495	4	0
Jim Wells	1	0	1	0
Victoria	1	0	0	1
Zapata	41	5,250	12	6
Zavala	10	0	6	4
Total	455	272,745	203	34
First 6 mos. 1929	613	117,118	228	67
Difference	158	155,627	25	33

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	76	30,334	31	15
February	76	53,325	27	2
March	82	28,271	40	6
April	76	78,472	28	4
May	82	59,891	49	2
June	63	22,452	28	5
Total	455	272,745	203	34

BUSY HALF YEAR IN CENTRAL WEST AREA

(Continued from Page 168)

ducers with an initial of 79,867 bbls., 63 dry holes and nine gas wells, or 97 more completions, 80 more oil wells, 64,094 bbls. initial production, nine more dry holes and eight more gas wells than in the first half of this year. Muskegon, Isabella, Midland Saginaw, Monroe, Cass and Gratiot Counties all showed new oil wells, but the other 14 counties failed to produce oil from the completions.

A separate report on Michigan will be found in another part of this edition.

CENTRAL WEST FIELDS

Field—	Comp.	Prod.	Dry	Gas	Old wells abd.
Lima	99	846	24	20	147
Central Ohio	582	9,178	158	234	0
Indiana	101	1,741	36	21	76
Illinois	115	2,123	47	1	49
Michigan	151	15,773	54	9	10
First half 1930	1,048	29,661	319	285	282
First half 1929	1,080	90,079	323	294	157
Difference	32	60,418	4	9	125

LIMA FIELD

Summary of completed wells in the first six months of 1930:

Month—	Comp.	Prod.	Dry	Gas	Old wells abd.
January	13	130	4	2	6
February	13	196	3	3	12
March	17	236	4	1	16
April	12	68	1	1	53
May	22	129	6	8	15
June	22	87	6	5	45
First half 1930	99	846	24	20	147
First half 1929	73	1,058	18	11	72
Difference	26	212	6	9	75

The above wells were distributed among the various counties in the Lima Field as follows:

County—	Comp.	Prod.	Dry	Gas	Old wells abd.
Wood	5	20	1	0	63
Hancock	11	210	1	2	17
Allen	9	207	0	0	10
Auglaize	4	10	3	0	5
Sandusky	13	44	4	3	43
Mercer	6	20	1	2	0
Seneca	30	141	14	6	7
Lucas	3	25	0	0	0
Ottawa	5	8	0	2	2
Shelby	2	25	0	0	0
Henry	1	30	0	0	0
Hardin	6	106	0	1	0
Huron	3	0	0	3	0
Logan	1	0	0	1	0
Total	99	846	24	20	147

CENTRAL OHIO

For the first six months of 1930, the wells completed in the Central Ohio Field were by months as follows:

Month—	Oil Comp.	wells	Prod.	Dry	Gas
January	94	30	879	25	39
February	82	24	1,488	26	32
March	80	28	1,317	19	33
April	96	29	1,663	26	41
May	111	38	2,130	35	38
June	119	41	1,701	27	51
First half 1930	582	190	9,178	158	234
First half 1929	609	178	5,180	182	249
Difference	27	12	3,998	24	15

The above wells for the first half of 1930 were distributed by counties as follows:

County—	Oil Comp.	wells	Prod.	Dry	Gas
Ashland	60	21	190	20	19
Medina	14	2	10	3	9
Lorain	21	0	0	8	13
Wayne	27	1	9	9	17
Holmes	17	5	457	7	5
Ashtabula	7	0	0	4	3
Richland	8	0	0	5	3
Knox	30	5	70	7	18
Coshocton	12	6	306	1	5
Summitt	33	0	0	6	27
Licking	50	40	2,353	4	6
Muskingum	92	48	4,118	22	22
Athens	57	12	51	16	29
Meigs	30	8	41	12	10
Jackson	5	0	0	1	4
Vinton	16	8	18	4	4
Lawrence	3	0	0	1	2
Tuscarawas	25	7	645	1	17
Stark	13	0	0	5	8
Fairfield	6	0	0	4	2
Morrow	1	0	0	1	0
Guernsey	28	18	805	7	3
Belmont	13	3	79	3	7
Gallia	1	0	0	1	0
Harrison	4	3	9	1	0
Pike	2	0	0	1	1
Cuyahoga	5	3	17	2	0
Lake	1	0	0	1	0
Trumbull	1	0	0	1	0
First half 1930	582	190	9,178	158	234
First half 1929	609	178	5,180	182	249
Difference	27	12	3,998	24	15

INDIANA

The wells completed for the first six months of 1930 in the Indiana fields were by months as follows:

Month—	Comp.	Prod.	Dry	Gas	Old wells abd.
January	17	114	2	8	4
February	11	257	7	2	13
March	16	461	3	5	3
April	11	252	5	1	22
May	21	266	9	2	5
June	25	391	10	3	29
First half 1930	101	1,741	36	21	76
First half 1929	65	663	26	16	47
Difference	36	1,078	10	5	29

The above wells for the first six months of 1930 were distributed among the various counties as follows:

County—	Comp.	Prod.	Dry	Gas	Abd.
Adams	4	25	2	0	1
Jay	1	15	0	0	23
Gibson	10	74	5	2	6
Pike	32	940	5	6	9
Daviess	3	30	0	0	2
Vigo	9	460	2	0	0
Sullivan	3	66	1	0	0
Spencer	11	123	7	0	0
Perry	8	8	5	2	0
Clay	1	0	1	0	0
Fountain	1	0	1	0	0
Harrison	2	0	0	2	0

(Table Continued on Next Page)

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County—	Comp.	Prod.	Dry	Gas	
Decatur	2	0	2	0	
Hancock	4	0	4	0	
Greene	1	0	1	0	0
Madison	1	0	1	0	0
Monroe	4	0	3	1	0
Grant	0	0	0	0	9
Crawford	1	0	0	1	0
Lake	1	0	1	0	0
Dubois	1	0	1	0	0
Huntington	0	0	0	0	20
Delaware	0	0	0	0	6
Lawrence	1	0	1	0	0
Total	101	1,741	36	21	76

ILLINOIS

During the first half of 1930 the completions in the Illinois Field were by months as follows:

Month—	Comp.	Prod.	Dry	Gas	Old wells abd.
January	25	390	7	0	7
February	9	220	4	0	4
March	22	403	11	0	3
April	18	111	11	1	6
May	21	337	8	0	14
June	20	662	6	0	15
First half 1930...	115	2,123	47	1	49
First half 1929...	85	3,311	34	1	38
Difference	30	1,188	13	0	11

The above wells were distributed among the various counties as follows:

County—	Comp..	Prod.	Dry	Gas	Abd.
Clark	2	0	2	0	0
Crawford	31	322	10	0	0
Lawrence	11	412	4	0	36
Wabash	18	175	6	1	4
St. Clair	44	1,204	17	0	8
Monroe	5	10	4	0	0
Madison	0	0	0	0	1
Clinton	1	0	1	0	0
Jasper	1	0	1	0	0
McDonough	2	0	2	0	0
Total	115	2,123	47	1	49

REVIVAL OF WORK IN EAST CENTRAL TEXAS

(Continued from Page 165)

transporting about 8,000 bbls. per day to that point where it has been loaded out on tank cars to different refineries which contracted for oil with the Pure Oil Co., but these deliveries have to be discounted since the 10-inch line to the coast started running oil.

Unit Plan in Van

The Van Field is being produced under Unit Plan No. 1 which was systematized by the five companies which hold acreage in the original block, and have production in the field, but within the past two weeks an extension well has been drilled by the Humble Oil & Refining Co., 1¼ miles northeast of production in the pool, and outside of the Unit Plan zone. As a result of this discovery, the companies which hold acreage in that direction from the main pool have been in conference in regard to forming Unit Plan No. 2. So far this second plan has failed to materialize, and many are of the opinion that it is quite doubtful of being formed. Several independent operators have leases on acreage in that direction from the field, two small leases lying on acreage which falls directly between production in Unit Plan No. 1 and the Humble extension, consequently these leases may have considerable weight in the success or failure of forming Unit Plan No. 2. Pure Oil Co. produces the leases under Unit Plan No. 1 and transports the oil for all producers in the field.

Wildcatting in Van Zandt

Van Zandt County, itself, has been the scene of much wildcatting, although no test outside of the Van area has failed to register commercial production. There are at present 15 locations, and drilling wildcats in that county, and a short distance across the southeastern line of the county, McElreath & Suggett and the Rowan Drilling Co. are drilling an interesting test on a structure which has been worked by magnetometer, seismograph and surface geology. This test spudded in on July 19 in the northwest corner of the 78-acre Gilliam farm in the J. C. Robertson Survey, Smith County, and bids fair to be one of the most interesting tests yet drilled in this district. Royalty is now selling for $100 base under surrounding acreage, and the Gulf Production Co. and Pure Oil Co. both purchased considerable protection acreage around the well.

Deep Test in Henderson

The Shell Petroleum Corp. drilled one of the most interesting tests of East Central Texas on its LaRue structure in eastern Henderson County. This test was drilled to a total depth of 4,815 feet, and after encountering salt water, was plugged. It was located on the Stephens farm, and upper formations were exceedingly favorable for a Woodbine producer, but formations in this district may also prove unreliable markers.

Blocked Much Territory

Many companies have taken blocks of acreage and checkerboarded acreage in practically all of the East Central Texas counties, during the past six months, and instrument and geological parties have been working all over the district gathering data and checking the surface geology, and district offices of several companies were opened in Tyler and Athens, from where most of the detail work is carried on. Scouts, land men and geologists were transferred from other quieter districts to this district, and the newly discovered field of Van brought back the "boom" to the surrounding country, even bringing the first railroad into Van. This road was constructed from Grand Saline, a distance of about 11 miles, and the first passenger train entered Van, July 17. It will be of great assistance to companies operating in the surrounding country for trucking material into a sandy area is not as easily accomplished as believed, and before the railroad entered Van all material had to be hauled to this field by truck from Grand Saline.

The Van Field will come under the general proration plan now being considered for the whole State of Texas, and if the plan materializes the field may be held to its present output of 25,000 bbls. This will be determined later.

EAST CENTRAL TEXAS
Completions by Fields

County—	Comp.	Prod.	Abd.	Gas
Anderson	14	990	11	4
Angelina	2	0	2	0
Camp	1	0	1	0
Cherokee	1	0	1	0
Delta	0	0	0	0
Freestone	6	0	6	0
Henderson	4	0	4	0
Hill	5	0	5	0
Hopkins	1	0	1	0
Hunt	1	0	1	0
Lamar	1	0	1	0
Leon	1	0	1	0
Limestone	10	41	8	0
Milam	2	200	1	0
Navarro	3	25	2	0
Robertson	1	0	1	0
Rusk	2	0	2	0
San Augustine	1	0	1	0
Smith	4	0	4	0
Upshur	1	0	1	0
Van Zandt	69	156,912	9	0
Woods	4	0	4	0
First 6 months 1930	134	158,168	67	4
First 6 months 1929	93	8,910	78	4
Difference	41	149,258	11	0

Completions by Months

Month—	Comp.	Prod.	Abd.	Gas
January	10	475	7	0
February	4	5,230	0	0
March	29	9,406	19	5
April	15	25,000	6	0
May	50	53,057	23	1
June	26	65,000	12	0
Total	134	158,168	67	4

CENTRAL WEST FIELDS

(Continued from Page 84)

the extreme western part of the State in Sugar Loaf Township, St. Clair County, the Ohio Oil Co.'s No. 25 in the southwest corner of the Matilda Dyroff farm, SE, Section 28, pumped an initial of 30 bbls. from the Trenton from 480-83 feet. Gorman & Weihl's second test on the O. G. Mueller, pumped about 20 bbls. from 728-90 feet. In the same township, the following wells have been abandoned: Thomas Whalen's No. 1 B. J. Mellon, Section 21, Otto Karbe's No. 1 George Riddle, same section; Cat Bird Syndicate's No. 1 Robert Rudolph, No. 1 George Duncan and Moody & Seagraves' No. 1 and 2 Missouri-Pacific right of way, all in the same section.

In Petty Township, Lawrence County, the Ohio Oil Co. abandoned No. 1 H. S. Poland, Jr., No. 2 farm, SE, Section 35.

In Crawford County, Prairie Township, Watson and others' No. 1 in the southeast corner of the J. F. Johnson, SW, Section 12, was dry at 1,000 feet. O. R. Oil & Gas Co.'s No. 2 M. Williams, SE, Section 2, was also a duster at 1,002 feet, while the Porterville Oil Co.'s No. 3 in the northeast corner of the G. G. Granby, NW, Section 16, same township, pumped 15 bbls. initial at 948 feet.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 70)

DOUGLAS COUNTY

Steinbuckel's No. 1 Unknown, SW NE NW Sec. 34-14-21..Shut down 1,100 ft.
Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-13-17 ..Shut down 1,800 ft.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w .....Fishing 3,140 ft.
Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w..Drlg. 3,650 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w .....Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Drlg. 3,750 ft.

ELK COUNTY

Croft & Frazier's No. 1 Keys, SE NE Sec. 26-31-10 ....Rig.

ELLSWORTH COUNTY

Slick et al's No. 1 Unknown, NW cor. Sec. 25-17-10w ....Drlg. 500 ft.

FORD COUNTY

McNabb et al's No. 1 Fowler, C SE Sec. 26-27-22w ....Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ..Shut down 3,575 ft.

GOVE COUNTY

Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w .....Drlg. 1,585 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w..Shut down 4,370 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w..Drlg. 4,370 ft.

GRANT COUNTY

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w..Shut down 50 ft.

GREENWOOD COUNTY

Staats et al's No. 1 Swan, NE NW Sec. 3-25-12 .....Rig.
Mid-Continent Pet. Corp.'s No. 1 Griss, NW SW Sec. 33-25-13 .....Drlg. 1,628 ft.
Harwood Oil Co.'s No. 1 Log, SW NE Sec. 20-25-10 ....Drlg. 710 ft.
Mallory's No. 1 Denchfield, SE NW Sec. 12-27-9 .....Drlg. 1,810 ft.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 .....Shut down 50 ft.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Shut down 1,836 ft.

HARPER COUNTY

Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w .....Shut down 1,830 ft.

KINGMAN COUNTY

Slick, Pryor & Lockhart's No. 1 Wetherall, NE SW Sec. 36-29-6w .....Rig.

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w ....Drlg. 3,135 ft.
McKenna et al's No. 1 Ralson, C NE Sec. 14-28-20w ....Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 .....Shut down 910 ft.

MARION COUNTY

Magnolia Pet. Co.'s No. 1 Davis, SE NW Sec. 18-21-2 ....Drlg. 740 ft.
Dixie and Arkansas Fuel's No. 1 Hacker, NW NE Sec. 6-17-1 .....Drlg. 240 ft.
Empire Oil & Ref. Co.'s No. 1 Hiebert, SE SW SE Sec. 20-20-2 .....Drlg. 2,800 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 .....Shut down 1,000 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 .....Shut down 50 ft.

McPHERSON COUNTY

Simmons & Canary's No. 1 Bishop, NW SW Sec. 15-18-1w .....Drlg. 2,816 ft.
Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w .....Rig.

MIAMI COUNTY

Clark's No. 1 Vaughn, SE SW Sec. 28-17-22w .....Drlg. 1,200 ft.

MORTON COUNTY

Argus Prod. Co.'s No. 2 Drubilbis, C NW Sec. 9-34-39w..Drlg. 1,895 ft.
Argus Prod. Co.'s No. 1 Morgan, C NW Sec. 8-33-39w ..Rig on ground.
McNabb et al's No. 1 Rickart, C SE Sec. 5-35-39w ....Drlg. 2,630 ft.
Argus Prod. Co.'s No. 1 Tillet, C SW Sec. 21-34-39w .....Drlg. 2,060 ft.
Argus Prod. Co.'s No. 1 Sullivan, C NW Sec. 29-34-39w ..Rig.
Argus Prod. Co.'s No. 1 Burton, C SE Sec. 11-33-40w .....Drlg. 2,428 ft.
Argus Prod. Co.'s No. 1 Mangels, C SE Sec. 4-33-39w ....Drlg. 2,550 ft.
Argus Prod. Co.'s No. 1 Morgan, C SW Sec. 6-33-39w ....Drlg. 2,475 ft.
Argus Prod. Co.'s No. 1 Mangels, C SW Sec. 19-33-39w ...T. D. 2,908 ft.; gas at 2,571-2,752 ft.; 1,000,000 ft. gas; comp.
Argus Prod. Co.'s No. 1 Mangels, C NE Sec. 20-33-39w ...Drlg. 2,440 ft.
Argus Prod. Co.'s No. 2 Haywood, C NW Sec. 31-33-39w ..T. D. 2,830 ft.; gas at 2,587-2,762 ft.; 13,500,000 ft. gas; comp.
Argus Prod. Co.'s No. 1 Garner, C SE Sec. 18-33-39w ....Drlg. 2,459 ft.
Argus Prod. Co.'s No. 1 Watson, C NE Sec. 27-34-40w ...Drlg. 2,300 ft.
Argus Prod. Co.'s No. 1 Hayward, C SW Sec. 9-34-39w ...14,000,000 ft. gas 2,603-2,781 ft.
Argus Prod. Co.'s No. 1 Thompson, C NW Sec. 18-34-39w..Drlg. 2,478 ft.
Argus Prod. Co.'s No. 1 Darth, C NE Sec. 20-34-39w ...Drlg. 2,640 ft.
Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-24-43w .....Drlg. 1,910 ft.; gas at 1,200-10 ft. and at 1,350 ft.

MORRIS COUNTY

Henderson et al's No. 1 Selsman, SW SE Sec. 24-16-9 ..Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6 .....Shut down 2,420 ft.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ....Drlg. 410 ft.

PAWNEE COUNTY

Skelly Oil Co.'s No. 1 Milhouse, C SE Sec. 34-23-17w ..Fishing 4,605 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w .....Shut down 4,005 ft.

RENO COUNTY

Shell Pet. Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w ....Rig.
E. L. Study and H. L. Turner's No. 1 Haury, NE NW Sec. 1-23-4w .....Drlg. 2,380 ft.
Phillips Pet. Co. and Tom Palmer's No. 1 Harsch, NE SE Sec. 14-26-5w .....Drlg. 3,090 ft.
United Pet. Co.'s No. 1 Houston, NW cor. Sec. 4-22-10w..Drlg. 1,750 ft.
C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w .....Drlg. 3,770 ft.

RICE COUNTY

Gypsy Oil Co.'s No. 1 Koch, SE NE NW Sec. 35-20-9w ..Drlg. 1,907 ft.
Hershey Golden & Skelly's No. 1 Brandenstein, Sec. 10-19-10w .....Rig on ground.
McPherson and Shell's No. 1 Jennings, NE SW NW Sec. 29-18-6w .....Drlg. 3,205 ft.
Miller & Brown's No. 1 Schartz, Sec. 14-20-10w .....Drlg. 2,965 ft.
Hoffner, Lee & Shell's No. 1 Slad Farm Corp., C SW Sec. 33-19-6w .....Drlg. 2,475 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ...Drlg. 2,995 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w .....Drlg. 3,530 ft.
McCulloch et al's No. 1 Williams, C NE Sec. 35-20-8w..Abandoned 3,809 ft.

ROOKS COUNTY

Streater-Stearns' No. 1 Conger, SE NW NE Sec. 16-10-16w .....Drlg. 250 ft.

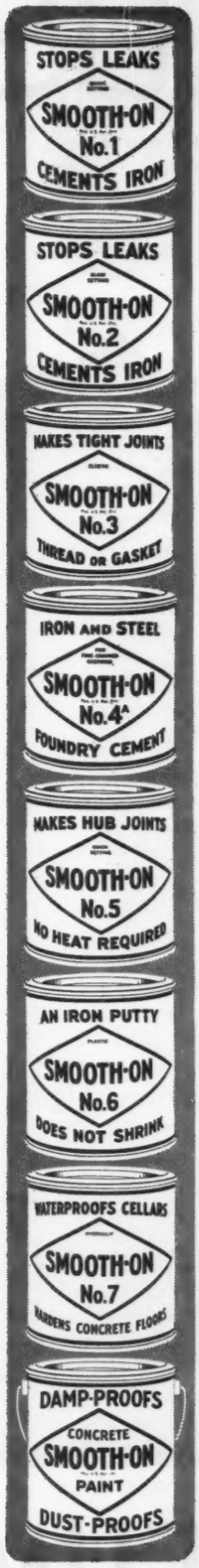
RUSH COUNTY

Prairie et al's No. 1 Lecker, NW SW SW Sec. 5-16-18w..Drlg. 475 ft.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w ..Location.
McPherson O. & G. Co.'s No. 1 Brack, C NW Sec. 24-17-16w .....Drlg. 2,415 ft.
Syndicate Oil Co.'s No. 1 Mohr, C SW Sec. 2-18-16w ..Drlg. 2,300 ft.
Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w .....Total depth 3,606 ft.; shut down.

RUSSELL COUNTY

Streater & Stearns' No. 1 Mitchell, SE cor. Sec. 6-15-14w..Drlg. 485 ft.
Empire O. & R. Co.'s No. 1 Herbel, NW NE SW Sec. 26-14-14w .....Drlg. 2,025 ft.
Slick et al's No. 1 Berrick, SE SW Sec. 23-15-13w .....Drlg. 3,195 ft.
Empire and Prairie's No. 2 Ochs, SE NE Sec. 23-15-14w..Drlg. 3,270 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w .....Shut down 774 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w ....Shut down 1,010 ft.

Announcement of new label designs and color



FOR better identification of the various Smooth-On Iron Cements and to make cans of the different kinds easier to find and tell apart in dark places, we have adopted new labels worded as shown, lithographed in bright yellow, lettered in blue and bearing the trade name SMOOTH-ON and the distinguishing number within a white diamond.

SMOOTH-ON Nos. 1 and 2

For repairing breaks, making tight joints and seams, and stopping leaks. Hard as iron when metalized. May be used on any metal. Withstands fire, water, steam, oil and very high pressures. No. 1 *Quick* and No. 2 *Slow* Hardening.

SMOOTH-ON No. 3

For making screw-thread joints, coating gaskets and sealing rivets, seams and joints. Cannot dry or blow out. Lubricates in assembling screw threads and makes a joint that will not leak.

SMOOTH-ON No. 4

For filling surface defects in castings. When hardened, has color and appearance of and can be filed like cast iron. Makes good castings better. Two grades: 4-A for *fine-grained;* and 4-B for *coarse-grained* castings.

SMOOTH-ON No. 5

For hub joints in cast-iron soil, water or gas pipes. Requires no heat. Handy in corners, confined places and horizontal lines where caulking with lead is difficult.

SMOOTH-ON No. 6

An iron putty that does not shrink. Makes watertight joints on sky and vault lights. Fills in seams, rivet heads, etc. Protects structural iron.

SMOOTH-ON No. 7

For waterproofing, dustproofing, oilproofing and hardening concrete, brick, etc. Waterproofs from the inside, on wet or dry surfaces.

SMOOTH-ON Concrete Paint

A dark gray preparation for painting concrete, brick or stone to stop leaks and to dust-proof surfaces. Also used on metal, wood, roofs, etc. Sold in ½ and 1-gal. cans.

SMOOTH-ON Coated Corrugated Iron Gaskets

For high or low pressure steam, water, gas or oil lines.

SMOOTH-ON Pipe Clamps

Used with Smooth-On No. 1 or Smooth-On No. 2 to stop thread leaks at joints without taking down the line.

Engineers, Superintendents, Foremen, etc., will find it to their advantage to become thoroughly familiar with the way these Smooth-On Products meet the needs of a very wide range of service conditions.

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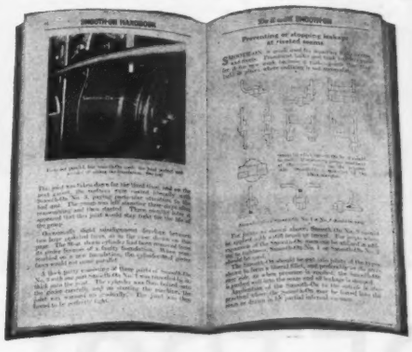

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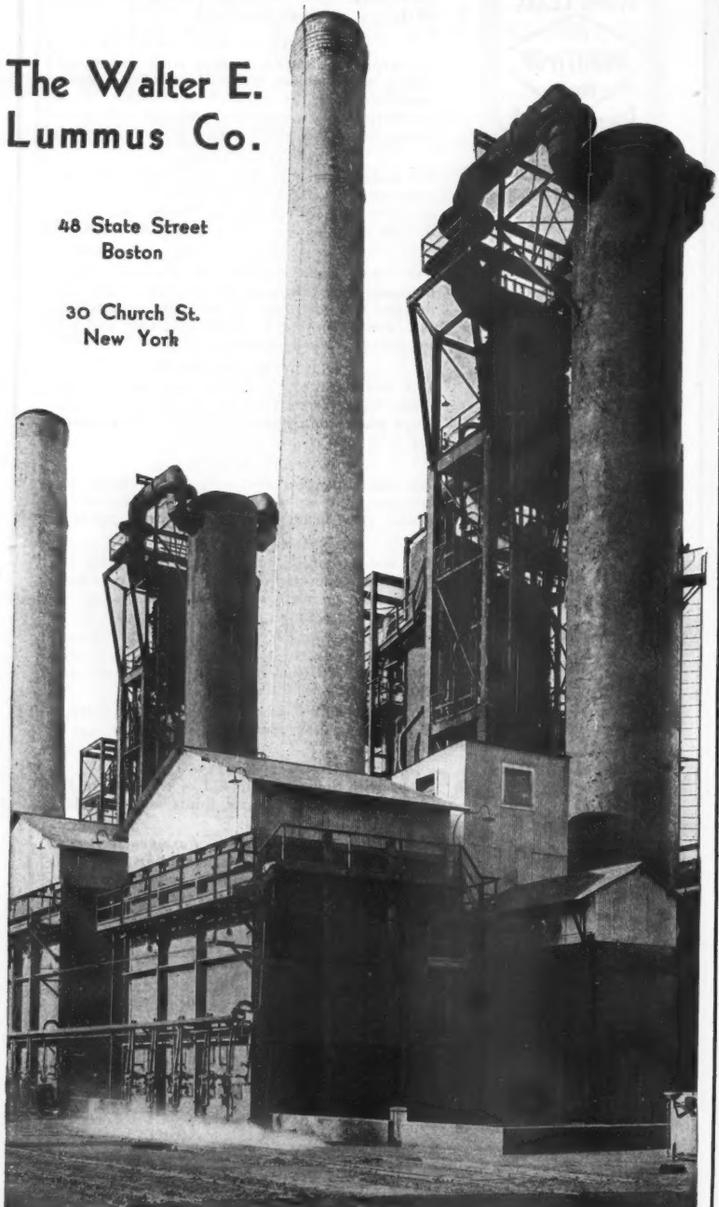


PETROLEUM PLANTS

SEDGWICK COUNTY

Newman et al's No. 1 Bawly, SE NW NE Sec. 2-27-2 ..Drlg. 2,305 ft.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w .....Shut down 975 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w .....Drlg. 1,820 ft.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 .....Shut down 985 ft.

STAFFORD COUNTY

Boucher Oil's No. 1 Christenson, NW cor. Sec. 22-22-11w..Drlg. 2,882 ft.
Boucher Oil's No. 1 Groves, NE cor. Sec. 9-22-11w .....Drlg. 2,200 ft.
Midwest's No. 36 Richardson, SE cor. Sec. 36-22-12w ....Fishing 2,838 ft.

STEVENS COUNTY

Agate Oil Co.'s No. 1 Gregory, NW SE Sec. 19-33-38w ..Drlg. 2,450 ft.
Argus Prod. Co.'s No. 1 Knier, C SW Sec. 27-34-37w ....Drlg. 320 ft.
Argus Prod. Co.'s No. 1 Harrison, C SW Sec. 30-34-37w..Rig.
Argus Prod. Co.'s No. 1 Irwin, C SE Sec. 10-35-37w ....Rig.
Argus Prod. Co.'s No. 1 Ratcliff, C SE Sec. 8-33-37w ...Rigging up standard tools 2,493 ft.
Argus Prod. Co.'s No. 1 Stone, C NE Sec. 3-33-39w .....Drlg. 2,575 ft.
Argus Prod. Co.'s No. 1 Libon, C NE Sec. 2-34-39w ....Drlg. 2,310 ft.
Barrington et al's No. 1 Creamer, C NW Sec. 2-35-39w..Drlg. 1,405 ft.
Freedell Const. Co.'s No. 1 Presinger, C SE Sec. 22-31-38w .....Drlg. 525 ft.
Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-39w .....Drlg. 1,625 ft.
McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 23-32-39w .....Rig.
McNabb et al's No. 1 Porter, Sec. 4-31-37w .....Drlg. 600 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w .....Shut down 1,600 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-33-2 ....Drlg. 1,930 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w ....Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 ....Drlg. 510 ft.

WOODSON COUNTY

Sheedy et al's No. 1 Reed, SW SE SW Sec. 26-23-14 ....Sand 1,597-1,644 ft.; 10 bbls.; completed.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w .....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w ....U. R. 5-in. csg.; T. D. 4,265 ft.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW NW Sec. 28-1n-22w .....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w..Shut down 3,250 ft.

PHELPS COUNTY

Trees Oil's No. 1 Bergan, Sec. 22-6-19w .....Rig on ground.

RICHARDSON COUNTY

Norton et al's No. 1 Albin, NE cor. Sec. 26-1-14 .....Miss. lime 2,200 ft.; landing 8-in. casing.

ROCK COUNTY

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w .....Drlg. 900 ft.

WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 2-1n-11w .....Shut down 555 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 68)

Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9 .....Drlg. 2,160 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e ....Shut down 3,030 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w ..Rig.
Shasta Oil Co.'s No. 1 Romwalt, SW NW Sec. 11-2-10w ..Drlg. 1,050 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w ....Shut down 1,450 ft.
Green et al's No. 1 Wilson, C NE SW Sec. 14-1-12w ....Shut down 4,055 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w .....Wilcox 6,132 ft.; drlg. 6,170 ft.; show oil.
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w .....Shut down 5,580 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ....Shut down 100 ft.
J. M. Henry et al's No. 1 Abraham, SE cor. NW Sec. 4-5-8w .....Rig.

GRANT COUNTY

Bu-Vi-Bar and Amerada's No. 1 Hurst, C SW Sec. 25-26-5w .....Rig.
Cowden et al's No. 2 Vollmer, CEL NE SW Sec. 22-25-4w.Shut down 5,640 ft.

GARVIN COUNTY

McMinn et al's No. 1 Carson, NE NW Sec. 5-3-4w .....Rig.
Nelson et al's No. 1 Strickland, NE NW Sec. 10-4-3w ...Shut down 2,880 ft.

GREER COUNTY

I. T. I. O. et al's No. 1 fee, C SW NE Sec. 17-6-24w ....Shut down 2,290 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w .....Drlg. 2,140 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w .....Fishing 5,570 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....Plugged back to 6,700 ft.; will test.

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21 .....Location.
Mid-Western's No. 1 Poister, C NE SE Sec. 33-10-22 ....Drlg. 3,265 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e .....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e ..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Drlg. 1,620 ft.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 .....1,000,000 ft. gas 2,284 ft.; drlg. 4,330 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Drlg. 4,180 ft.

KAY COUNTY

Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w .....Rig on ground.
Alco Royalty Co.'s No. 1 Wolf, SE SW SE Sec. 34-26-2w. Drlg. 3,108 ft.
Blankenship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 .....Fishing 3,460 ft.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w .....Spudding.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Shut down 6,015 ft.

KIOWA COUNTY

Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w.Shut down 1,525 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24..Drlg. 5,875 ft.

LATTIMER COUNTY

Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 ..... Shut down 1,450 ft.
Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e ..... Abandoned 3,608 ft.

LINCOLN COUNTY

J. J. Deaner et al's No. 1 Knox, NE NW Sec. 28-17-2 .... Drlg. 3,735 ft.
Atlantic Oil Prod. Co.'s No. 1 Parker, SE NW Sec. 5-14-6 ..... Drlg. 3,064 ft.
Magnolia Pet. Co.'s No. 1 Winship, NE SW Sec. 2-13-4... Drlg. 4,200 ft.
Tom Slick Oil Co.'s No. 1 Hammer, SE NW NW Sec. 35-16-2 ..... Drlg. 6,065 ft.

LOGAN COUNTY

Slick & Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w .. Drlg. 1,225 ft.
Prairie and Slick's No. 1 Morgan, NW NE Sec. 33-16-1w ..... Fishing 5,275 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w. Drlg. 1,610 ft.

McINTOSH COUNTY

N. J. Weible's No. 1 Asbell, NE SW SE SE Sec. 35-12-17 ..... Drlg. 300 ft.
Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MURRAY COUNTY

Chieftain Royalty Corp.'s No. 1 Hendrix, SW SE NW Sec. 27-2-2 ..... Fishing 1,920 ft.

MUSKOGEE COUNTY

Becker & Hutchinson's No. 1 May, SE NE Sec. 16-12-19.. Rig.
Mid-Western Oil Co.'s No. 1 Lacey, NW NE Sec. 31-12-19. Comp. 590-600 ft.; 2,000,000 ft. gas.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 .... Shut down 1,011 ft.

NOBLE COUNTY

Weaver & Craigin's No. 1 Frederick, C SW NE Sec. 4-24-1w ..... Drlg. 2,345 ft.
Gypsy Oil Co.'s No. 1 Bergstrom, SE NE Sec. 28-22-1w.. Abandoned 5,644 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 ..... Drlg. 3,287 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 ..... Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10.. Shut down 3,661 ft.

OKLAHOMA COUNTY

Cromwell-Franklin's No. 1 Lincoln Park, SW cor. Sec. 12-12-3w ..... Drlg. 2,680 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... Drlg. 4,100 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w ..... Drlg. 6,135 ft.
Prairie and Slick's No. 1 Dill, SE NW Sec. 17-13-3w .... Drlg. 6,735 ft.; show gas.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w ..... Shut down 6,217 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w ..... Fishing 6,532 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w ..... Drlg. 7,100 ft.
Ryan Consolidated's No. 1 Lawton, NE NW Sec. 3-11-2w.. Drlg. 6,820 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w ..... T. D. 6,971 ft.; water; plugging back 3,250 ft.; to test.

OSAGE COUNTY

Western American Oil Co.'s No. 1, NW SE Sec. 28-23-6 .. Drlg. 2,120 ft.

PAWNEE COUNTY

L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 .... Drlg. 1,187 ft.
Flynn & Morgan's No. 1 Jones, SW NE Sec. 22-20-5 .... Drlg. 1,400 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 .... Rig.

PITTSBURG COUNTY

Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e ..... Fishing 3,975 ft.

POTTAWATOMIE COUNTY

The Texas Company's No. 1 Knight, SW SE Sec. 3-8-3... Rig on ground.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w .. Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w .... Shut down 2,905 ft.

SEMINOLE COUNTY

Pure Oil Co.'s No. 1 Shaffer Ashby, SE NE Sec. 22-7-6.. Fishing 4,030 ft.
T. Adkins et al's No. 1 McGilbray, SE NE Sec. 4-8-8 .... Drlg. 4,034 ft.
Magnolia and Twin State Oil Co.'s No. 1 Harns, SW NE NE Sec. 8-5-6 ..... Wilcox 3,507-13 ft.; water; abandoned.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 .... Location.

WASHITA COUNTY

Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w ..... Shut down 280 ft.

WOODS COUNTY

Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w ..... Drlg. 6,211 ft.
Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Shut down 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w ..... Drlg. 7,045 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w ..... Shut down 1,387 ft.
Prairie Oil & Gas et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w ..... Shut down 7,445 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w ..... Shut down 1,910 ft.

OKLAHOMA PANHANDLE

CIMARRON COUNTY

Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5.... Drlg. 3,525 ft.

TEXAS COUNTY

Argus Prod. Co.'s No. 1 Fischer, C NW Sec. 29-6-14 .... Location.
Argus Prod. Co.'s No. 1 Parker, C NW NW Sec. 18-6-15 ..... Rig on ground.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 ..... Drlg. 4,280 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e ..... Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Bryant-Croxton's No. 1 Mason, NW SE NW Sec. 4-1s-14.. Shut down 1,850 ft.
Brookshire's No. 1 Guinn, NW cor. Sec. 18-2s-10 ..... Shut down 100 ft.

BRYAN COUNTY

Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e.. Drlg. 400 ft.
Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 ..... Shut down; 6-in. csg. 265 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Shut down 2,590 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6s-19e ..... Shut down 1,345 ft.

COMANCHE COUNTY

Pelwin Oil Co.'s No. 1 Tafepirdy, C NW NE NE Sec. 5-1s-9w ..... Drlg. 1,826 ft.

COTTON COUNTY

H. J. Dillard's No. 1 McMillan, SE NW Sec. 2-4s-13w .... Location.

LOVE COUNTY

Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w .. Shut down 3,130 ft.
Gilcrease Oil's No. 1 Burkhart, NE NW Sec. 13-6s-1 .... Rig.

MARSHALL COUNTY

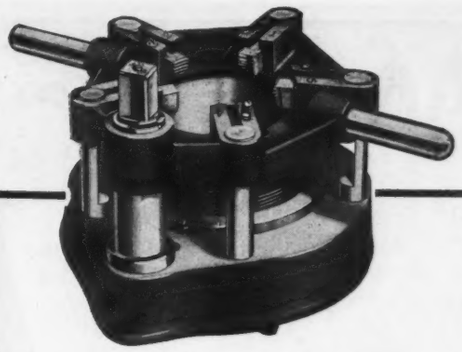
Pace et al's No. 1 Hicks, SW NW Sec. 8-6s-7 ..... Drlg. 390 ft.
Walker et al's No. 1 Parks, NW NE NW Sec. 5-5s-5 .... Drlg. 650 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6 .... Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e .... Drlg. 370 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 ..... Shut down 2,287 ft.

STEPHENS COUNTY

R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n .... Shut down 1,060 ft.
Wirt Franklin Petroleum Corp.'s No. 1 McPhail, NW SE Sec. 1-2s-7w ..... Total depth 4,529 ft.; to test.



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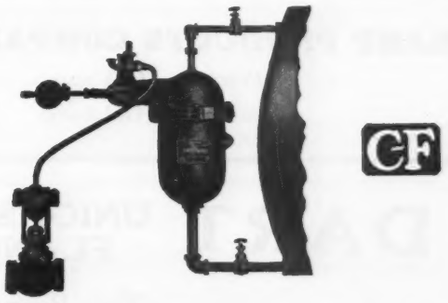

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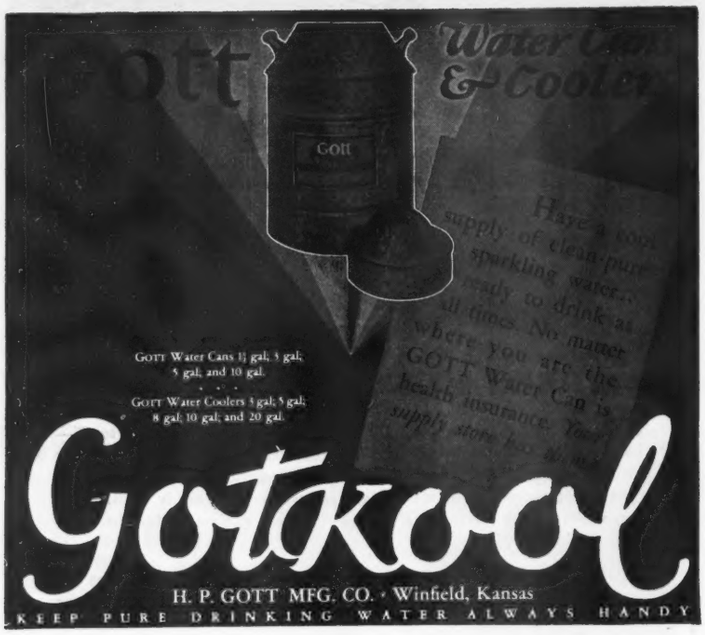
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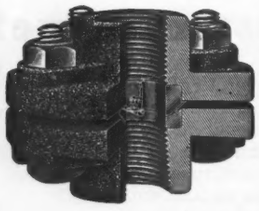

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MT. PLEASANT TAKES LEAD IN MICHIGAN FIELDS

(Continued from Page 165)

of July 10, 1930, shows a total of 141 operating companies or individuals. The following table gives a comparison of the record of the field with the totals as of a similar survey made December 15, 1929:

Nature—	Dec. 15, 1929	Dec. 10, 1930	Difference
Oil wells	324	332	8
Gas wells	37	30	—7
Dry holes	60	55	—5
Abandoned	42	78	36
Locations	42	36	—6
Total	505	531	26

Transfer of a number of wells listed as dry on December 15 but not originally completed as "dusters" to the abandoned column in the July 10 report accounts for the fact that five less dry holes are listed on the latter date.

Deep Test Projected

The future of the Muskegon Field depends now upon the success of a deep test project which recently has been started by the Muskegon Oil Corp. and several other local interests including the West Michigan Consumers Co., operators of the largest gas pipe line system in the field, Nelson & Witt, Inc., one of the largest local operating concerns, the Reed Oil Co., another large operator, locally owned and several other companies.

Officials and representatives of these companies have joined to form the Muskegon Deep Test Syndicate, a $50,000 company which will deepen the Muskegon Oil Corp.'s No. 5 H. Heinz well, NE NE, Section 8-10n-16w, Muskegon Township.

This well is one of 10 in the Muskegon Field which was drilled as an 8-inch hole to the top of the Dundee formation at about 2,000 feet and is suitable for deepening to the Trenton limestone at 5,200 feet or at any lesser depth that commercial production might be encountered.

It is located on Daniloff Avenue, an old township road that runs through the center of the Muskegon Township half of the field and is about 2,050 feet deep. H. D. Crider, geologist who located the discovery well of the field, will have charge of geological work on the deep test.

Sufficient funds have been raised and contracts will be let in the near future for drilling of this well which may revive or finally kill the known Muskegon Field for the future.

Drilling for Structures

The Reed Oil Co. also has a proposed structure test drilling program which will determine the possible location of any more highs in Muskegon County. A rig will be moved in shortly for the first of these wells in Fruitland Township, directly north of Laketon Township, one of the few townships in Muskegon County in which no wildcat wells or test drilling heretofore has been done.

Survey of Mount Pleasant

A survey of the Mount Pleasant Field as of July 10, 1930, shows that 16 companies have drilled wells in the field. Of the 16 all but two have one or more producing wells although the Pure Oil Co. with 81 wells owns about 60 per cent of the producers.

Of an average daily production of 7,500 bbls. in the proved field the Pure Oil Co. wells account for about 4,500 bbls. or more and the independents for the other 3,000 bbls. a day.

The total oil wells, dry holes and abandoned holes for July 10, 1930, as compared with January 27, 1930, is given below:

	Jan. 27	July 10	Change
Oil wells	89	142	53
Dry holes	11	13	2
Abandoned	1	3	2
Total	101	158	*57

*Increase.

In addition to the above record of completed wells in the proved field there are now 23 locations on which wells are as yet uncompleted but on most of

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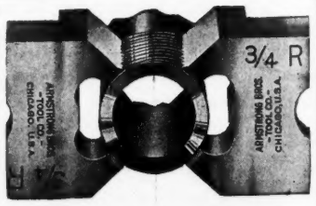

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which drilling operations are being carried forward.

The proved field is now fairly well defined with the exception of developments to the north and northwest where the greatest activity is now centered.

The field is located about 6 miles east of the city of Mount Pleasant and about 20 miles west of Midland. It is irregular in shape running from southeast to northwest through Sections 17, 18 and 7, of Greendale Township, Midland County, and Sections 13, 12, 11, 1, and 2 of Chippewa Township, Isabella County. It is about 4 miles long and 2 miles wide and is intersected both by the Chippewa River and by Michigan State trunk line highway M-20.

All of the wells in the field are Dundee producers at between 3,500 and 3,600 feet deep although some also produce from the Traverse pay sands.

The Mount Pleasant Field is primarily an oil field with gas enough to flow only part of the wells. A considerable supply of casinghead gas is available, however, for use in drilling additional wells and other limited purposes.

The Muskegon proved field is about 3 miles long and half a mile wide, or considerably smaller than the present proved area in the Mount Pleasant Field. It extends almost due east and west and includes all of Section 12, and part of Section 11, Laketon Township, parts of Sections 5, 6, 7 and 9 of Muskegon Township, and all of Section 8 of the same township.

Although there are still some upper and lower Traverse oil and gas wells in the Muskegon Field, most of the wells are now producing from the Dundee pay sands. The upper Traverse is encountered at about 1,650-1,700 feet, the lower Traverse at 1,850-1,900 feet and the Dundee from 2,000-2,100 feet in the proved field.

Tables giving the names of the operating companies and the number and nature of the wells which they have drilled both for the Muskegon and Mount Pleasant Fields are attached to this report.

Michigan

There were a total of 151 completions reported in the Michigan fields for the first half of 1930 and distributed by months as follows:

Month—	Comp.	Prod.	Dry	Gas	Oil	Abd.
January	23	4,955	5	0	18	0
February	28	2,543	10	3	15	0
March	17	1,770	3	0	14	0
April	35	2,164	16	2	17	2
May	28	1,020	16	3	9	6
June	20	3,321	4	1	15	2
First half 1930	151	15,773	54	9	88	10
First half 1929	248	79,867	63	17	168	0
Difference	97	64,094	9	8	80	10

The above wells distributed by counties for the first half of 1930, as follows:

County—	Comp.	Prod.	Dry	Gas	Oil	Abd.
Muskegon	18	505	2	5	11	10
Isabella	67	10,732	13	1	53	0
Midland	19	4,109	2	0	17	0
Ottawa	2	0	2	0	0	0
Oceana	6	0	6	0	0	0
Newaygo	1	0	1	0	0	0
Clare	4	0	4	0	0	0
Saginaw	3	67	0	0	3	0
Montcalm	2	0	2	0	0	0
Alpena	1	0	1	0	0	0
Ingham	2	0	2	0	0	0
Monroe	2	80	1	0	1	0
Allegan	4	0	4	0	0	0
Livingston	1	0	1	0	0	0
Mason	1	0	0	1	0	0
Kent	1	0	1	0	0	0
Cass	5	30	3	0	2	0
Kalkaska	2	0	2	0	0	0
Gratiot	3	250	2	0	1	0
Manistee	3	0	1	2	0	0
Lake	2	0	2	0	0	0
Van Buren	2	0	2	0	0	0
Total	151	15,773	54	9	88	10

CANADIAN EXPORTS

CHATHAM, Ontario, July 26.—Figures compiled by the Dominion Bureau of Statistics show that Canadian exports of petroleum in May were valued at $228,390, compared with $145,682 in May, 1929. Refined oil, coal oil and kerosene were exported to the value of $3,533, compared with $3,793. Oil, gasoline and naphtha exports were valued at $134,873, as against $48,870 in May, 1929. Exports of mineral oil amounted to $11,054 and mineral wax to $10,250.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for May

Runs

Company—	Month (bbls.)	Dy. av. (bbls.)
Prairie P. L. Co.*	4,185,000	135,000
Gulf P. L. Co.	1,759,117	56,746
Texas P. L. Co.	742,239	23,943
Empire P. L. Co.	2,101,871	67,802
Magnolia P. L. Co.	2,137,585	68,954
Cosden P. L. Co.	703,981	22,709
Sinclair P. L. Co.*	3,115,500	100,500
Oklahoma P. L. Co.	3,465,144	111,779
Other lines*	6,355,000	205,000
Total May	24,565,427	792,433
Total April	26,275,600	775,852
Difference	1,289,827	16,581

Shipments

Prairie P. L. Co.†	5,675,941	183,095
Gulf P. L. Co.	1,982,356	63,947
Texas P. L. Co.	1,251,845	40,382
Empire P. L. Co.	2,165,971	69,870
Magnolia P. L. Co.	2,091,415	67,465
Cosden P. L. Co.	828,786	26,735
Sinclair P. O. Co.†	3,786,502	122,145
Oklahoma P. O. Co.	3,554,507	114,661
Other lines*	4,960,000	160,000
Total May	26,297,323	848,300
Total April	25,779,932	859,330
Difference	517,391	11,030

Stocks

Prairie O. & G. Co.*	37,246,000
Gulf P. L. and Gypsy Oil Co.	8,210,958
The Texas Company	4,811,991
Empire P. L. Co.	5,942,065
Mid-Continent Petroleum Corp.	3,563,397
Sinclair Crude Oil Pur Co.*	20,219,000
Magnolia Petr. Co.	6,856,747
Oklahoma P. L. Co.	3,269,065
Carter Oil Co.	9,589,116
Other lines*	24,515,000
Total May	124,223,339
Total April	125,234,195
Difference	1,010,856

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF JUNE

Runs from Wells

In the following table will be found the regular receipts from the wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for May and June:

	May, '30	June, '30
Nat. Transit	461,674.96	401,832.59
S. W. Pa. P. L.	96,708.13	87,617.14
Eureka P. L.	380,517.12	358,790.11
Buckeye P. L. (Macksburg)	375,176.98	364,632.13
Buckeye P. L. (Cleveland)	11,013.23	11,532.20
Buckeye P. L. (Lima, etc.)	106,081.45	104,524.39
Indiana P. L.	6,059.01	4,668.50
Cumberland P. L.	185,523.95	180,908.73
N. Y. Transit	45,923.42	36,257.24
Tide Water P. L.	29,020.94	27,940.66
Pure Oil	260,780.94	237,473.54
Paragon Dev.	10,310.05	9,056.61
Stoll Oil Ref.	3,543.74	3,473.92
Bradford Trans.	524,672.68	434,192.37
Total	2,497,006.60	2,262,900.13
Daily average	80,548.60	75,430.00

Note—Paragon Refining Co. had other receipts of 180,341.85 bbls. Paragon Development had other receipts of 195.48 bbls. Indian Refining Co. had other receipts of 432.-376.98 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for May and June:

	May, '30	June, '30
Nat. Transit	537,296.01	514,958.60
S. W. Pa. P. L.	340,797.62	283,475.85
Eureka P. L.	334,738.16	287,924.63
Buckeye P. L. (Macksburg)	173,890.69	191,217.71
Buckeye P. L. (Cleveland)	2,159.44	2,197.39
Buckeye P. L. (Lima, etc.)	1,538,347.59	1,321,483.64
Indiana P. L.	1,425,991.36	1,380,005.73
Cumberland P. L.	188,023.47	202,494.92
Southern P. L.	67,685.17	69,870.56
N. Y. Transit	275,186.13	200,874.00
Northern P. L.	243,973.21	212,164.55
Tide Water P. L.	572,960.65	535,527.04
Pure Oil	264,625.94	213,701.67
Paragon Ref.	246,793.39	182,113.94
Indian Ref.	471,517.79	384,579.08
Paragon Dev.	13,111.75	10,047.07
Bradford Trans.	443,668.31	532,989.04
Tuscarora Oil	559,120.11	506,409.06
Total	7,699,886.79	7,032,034.48
Daily average	248,383.44	234,401.15

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of May and June:

	May, '30	June, '30
Nat. Transit	922,959.33	958,556.79
S. W. Pa. P. L.	523,918.94	473,725.84
Eureka P. L.	1,326,181.24	1,513,002.87
Buckeye P. L. (Macksburg)	776,107.03	703,931.58
Buckeye P. L. (Cleveland)	58,028.42	55,515.82
Buckeye P. L. (Lima, etc.)	5,266,289.90	5,431,450.43
Indiana P. L.	783,251.69	795,353.46
Cumberland P. L.	659,548.06	642,482.12
Southern P. L.	359,776.10	311,844.58
N. Y. Transit	222,473.09	189,973.76
Northern P. L.	356,006.52	398,070.99
Tide Water P. L.	883,770.53	997,249.93
Pure Oil	163,062.67	193,552.62
Paragon Ref.	17,163.40	15,137.08
Indian Ref.	70,242.67	111,451.06
Paragon Dev.	5,363.82	4,831.72
Tuscarora	278,548.28	277,158.49
Bradford Trans.	380,261.55	323,566.32
Total	13,052,953.24	13,396,855.46
Decrease	181,008.61	
Increase		343,902.22

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of May and June showing gross stocks of the above fields:

	May, '30	June, '30
Pennsylvania	4,165,922.63	4,327,366.29
Lima	780,012.54	837,358.20
Kentucky	704,271.61	699,141.43
Mid-Continent	7,224,482.66	7,306,722.77
Illinois	28,005.26	42,809.46
Michigan	150,258.54	183,547.31
Total	13,052,953.24	13,396,855.46

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
January	56,209	52,904	51,749	75,907
February	61,298	57,002	51,833	79,256
March	63,247	57,485	54,252	76,688
April	60,927	56,812	58,444	84,536
May	60,284	62,067	59,902	80,548
June	62,757	58,230	58,833	75,430
July	58,674	57,144	66,087	.....
August	60,870	57,745	66,087	.....
September	60,285	53,487	67,315	.....
October	147,080	58,100	76,093	.....
November	57,275	53,865	74,831	.....
December	53,089	52,025	74,561	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1927	1928	1929	1930
January	141,227	146,465	165,721	217,623
February	138,534	167,368	159,387	224,355
March	133,777	158,883	161,474	228,846
April	140,227	172,935	169,737	241,845
May	144,594	180,559	184,281	248,383
June	149,772	188,024	185,404	234,491
July	151,850	189,470	194,763	.....
August	188,653	192,853	184,946	.....
September	144,213	194,138	201,214	.....
October	147,036	176,000	191,367	.....
November	150,975	176,898	202,743	.....
December	144,504	173,572	186,257	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
January	12,276,710	7,596,564	12,220,045
February	12,180,419	8,738,835	12,991,541
March	12,239,725	9,002,058	13,247,217
April	11,740,125	8,978,172	13,233,961
May	11,602,468	8,903,560	13,052,953
June	11,287,678	8,921,275	13,396,855
July	10,819,331	9,211,595	.....
August	10,236,743	9,440,643	.....
September	9,660,910	9,443,067	.....
October	9,229,709	9,441,101	.....
November	8,366,553	9,868,538	.....
December	7,539,555	11,253,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks June 30	1,997,939.31
Runs from wells	544,721.91
Other receipts	137,591.14
Regular deliveries	440,718.15
Other deliveries	330,660.20

The amount of Illinois oil run by the Tide Water Pipe Co. in June was 27,940.66 bbls. Deliveries were 27,940.66 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1930—	Runs	Deliveries
June	572,662.57	468,658.81
1929—		
February	517,320.17	503,387.70
March	723,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,312.33
June	568,454.70	818,845.97
July	611,106.79	828,159.44
August	626,351.99	746,425.06
September	582,457.66	669,947.72
October	622,302.83	558,558.65
November	565,108.75	427,064.62
December	548,924.41	489,368.81
1930—		
January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	530,074.22	509,304.60
May	605,147.37	504,069.84

Tide Water Pipe Co., Ltd., also delivered in June 285,412.03 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
June	14,866	3,167	23,100	10,300	6,100	57,533	.....	.....	.....	.....	.....	57,533
July	15,387	4,806	34,290	19,388	2,452	76,323	.....	.....	.....	.....	4,161	80,484
August	20,389	3,129	35,226	18,903	5,548	83,194	.....	.....	.....	.....	12,161	95,355
September	19,433	.....	31,834	11,900	6,200	69,367	.....	.....	.....	.....	4,800	74,167
October	9,065	4,677	42,065	12,000	9,677	77,484	.....	.....	.....	.....	4,097	81,581
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	.....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,290
January	13,484	1,936	34,257	22,323	9,516	86,516	.....	.....	.....	.....	2,258	88,774
February	7,678	.....	24,714	14,321	5,000	51,714	.....	.....	.....	.....	2,607	54,321
March	10,548	3,065	28,871	8,774	22,494	73,742	.....	.....	.....	.....	805	74,548
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	8,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
June	31,433	8,667	134,600	42,967	18,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387
August	33,387	14,355	162,644	30,936	20,355	261,677	4,226	12,742	.....	1,484	18,452	280,129
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,367	1,333	36,500	302,300
October	39,936	10,519	137,096	38,160	38,644	264,355	6,613	13,388	11,064	4,419	35,484	299,839
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	12,533	7,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,775	233,678	5,548	16,484	6,613	1,774	30,419	264,097
January	21,161	10,678	134,581	38,677	43,806	248,903	4,322	6,453	.....	548	11,323	260,226
February	24,500	14,714	147,357	36,036	39,786	262,393	2,821	11,072	3,500	1,964	19,357	281,749
March	28,355	3,839	151,806	36,645	34,903	255,548	4,323	11,645	839	2,419	19,226	274,774
April	31,400	8,933	123,500	40,433	19,434	223,700	.....	7,400	2,433	4,167	14,000	237,700
May	24,129	9,322	174,194	39,291	28,226	275,161	8,194	11,548	2,935	1,323	24,000	299,161

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
June:	Month	24,624,627	20,561,112	24,698,029	3,636,150	2,112,270	1,699,581	2,180,752	3,887,000	83,399,521
	Daily average	820,821	685,371	823,267	121,205	70,337	56,653	72,692	129,567	2,779,984
July:	Month	26,796,627	22,371,925	26,969,989	3,867,157	2,137,047	1,716,488	2,360,836	4,439,000	90,659,069
	Daily average	864,407	721,675	869,997	124,747	68,937	55,370	76,156	143,200	2,924,486
August:	Month	27,233,353	22,429,522	27,491,362	3,816,555	2,086,083	1,764,973	2,478,016	4,363,000	91,662,864
	Daily average	878,495	723,532	886,818	123,115	67,298	56,934	79,936	140,742	2,956,866
September:	Month	26,104,264	21,299,490	26,067,065	3,780,690	1,959,720	1,718,250	2,347,020	4,075,000	87,351,499
	Daily average	870,142	709,983	868,902	126,023	65,324	57,275	78,234	135,917	2,911,716
October	Month	26,895,160	20,821,646	26,412,167	3,429,468	2,000,027	1,956,326	2,392,952	4,482,000	88,389,746
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,382
November:	Month	21,317,540	19,193,760	24,396,034	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,629
	Daily average	710,585	639,798	829,868	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,376	25,609,323	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	818,394	114,486	61,841	60,592	76,734	134,455	2,622,568
January:	Month	21,983,242	20,802,984	25,284,352	3,273,197	1,817,685	1,780,969	2,151,090	4,216,000	81,309,519
	Daily average	709,137	671,064	815,624	105,587	58,635	57,451	69,390	136,000	2,622,882
February:	Month	20,885,660	17,977,624	23,314,637	2,965,704	1,608,376	1,738,425	2,027,984	3,780,000	74,298,410
	Daily average	745,916	642,058	832,668	105,918	57,442	62,087	72,429	135,000	2,653,515
March:	Month	19,699,979	19,112,306	25,503,880	3,504,395	1,817,871	1,943,093	2,337,028	4,231,500	78,149,853
	Daily average	635,483	616,526	822,679	113,045	58,641	62,680	75,388	136,500	2,520,945
April:	Month	18,768,743	19,541,310	24,799,768	3,734,253	1,724,460	1,909,552	2,334,810	4,134,000	76,946,896
	Daily average	625,625	651,377	826,658	124,475	57,482	63,652	77,827	137,800	2,564,897
May:	Month	19,044,444	20,587,503	26,214,068	3,973,385	1,659,895	1,914,290	2,565,219	4,402,000	80,365,804
	Daily average	614,337	664,113	845,615	128,335	53,545	61,751	82,749	142,000	2,592,445
	Total 12 months	275,059,193	244,792,058	307,260,674	42,965,580	22,751,565	21,873,864	27,904,871	50,206,600	992,814,405

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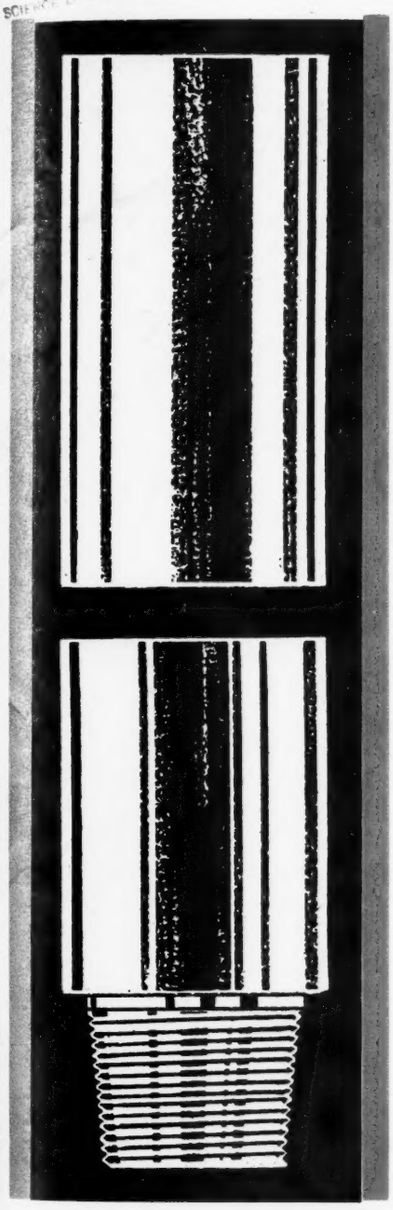

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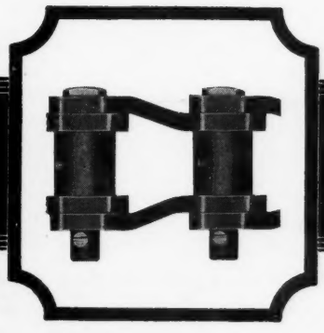

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OKLAHOMA CITY, OKLAHOMA

SPENGLER TOOL JOINTS MEET A.P.I. SPECIFICATIONS

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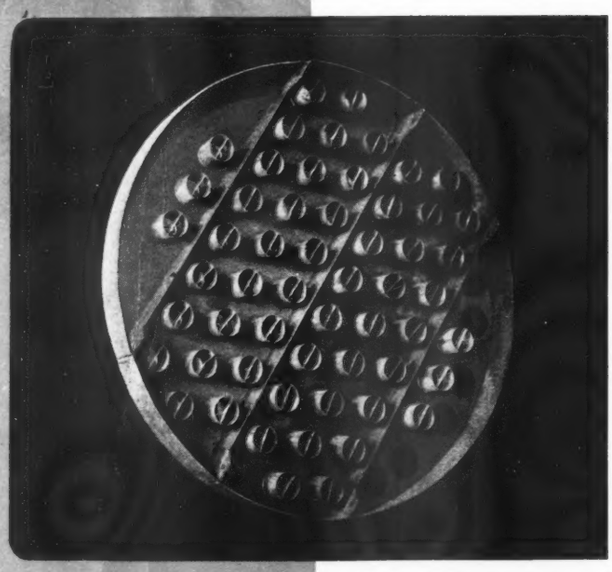

Hydrogen sulphide cannot destroy still parts of Allegheny Metal. Made by Pittsburgh Producers Supply Co., Pittsburgh, Pa.

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Allegheny Alloys offer the greatest range of corrosion resistance for the heat and pressure of cracking

CRACKING equipment, working at great heat and pressure, demands the corrosion resistance and strength of Allegheny Alloys. With these alloys you can build equipment to withstand the action of hydrogen sulphide, salt water and other corrosive agents common to refinery work.

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When you need an alloy that is non-corroding in normal refinery applications, that is stronger than mild steel—specify Allegheny Metal. When you need a metal to withstand progressive corrosion where surface discoloration does not matter, ask for Ascoloy 33. For heat resistance up to 2100°F., Ascoloy 44 will be easy to fabricate and will serve well. For simple fabrication and extreme heat resistance (to 2150°F.), Ascoloy 55 is best.

Tons of Allegheny alloys are fabricated every day for refinery use. These alloys are now used for cracking still tubes, heat exchanger tubes, condenser tubes, bubble caps and trays, lining of vessels, valve trim, floats and other important equipment. No one can foretell how widely Allegheny Alloys will be applied in the future.

Call on our nearest office when you have a corrosion condition that must be handled efficiently. Ask for information about the Allegheny Alloys, writing in detail about your problems. Let our engineers tell you how these alloys will reduce your costs and improve production.

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• For low or high pressures, for routine or severe service, the Walworth line will live up to your most exacting demands for safety and economy of operation. •

FIG 207B GLOBE VALVE

FIG 207C ANGLE VALVE

• FIG. 207B • FOR 200 LBS. W.S.P • One of the outstanding quality products in the Walworth line is this heavy bodied valve of tough bronze. . . the Walworth 200 lb. Valve with a seat and disc of SIG-MALLOY 222 (a nickel alloy which is especially effective against corrosion and any kind of hard smashing service.)

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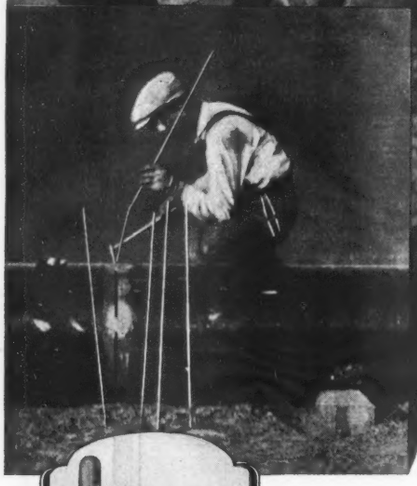

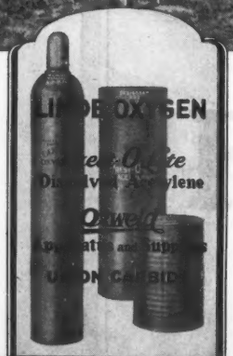

. . . . . and offers invaluable assistance in organizing your welding operations for maximum speed and economy.

Step by step, from the mobilization, training, and testing of welders and the careful selection of equipment and supplies, it goes to the final testing of the line. Cooperating with your own engineers, it makes available to users of Linde Oxygen the facilities developed by years of experience on thousands of miles of pipe line.

It assures absolute tightness of the line with tough, ductile welds as strong and as permanent as the pipe itself.

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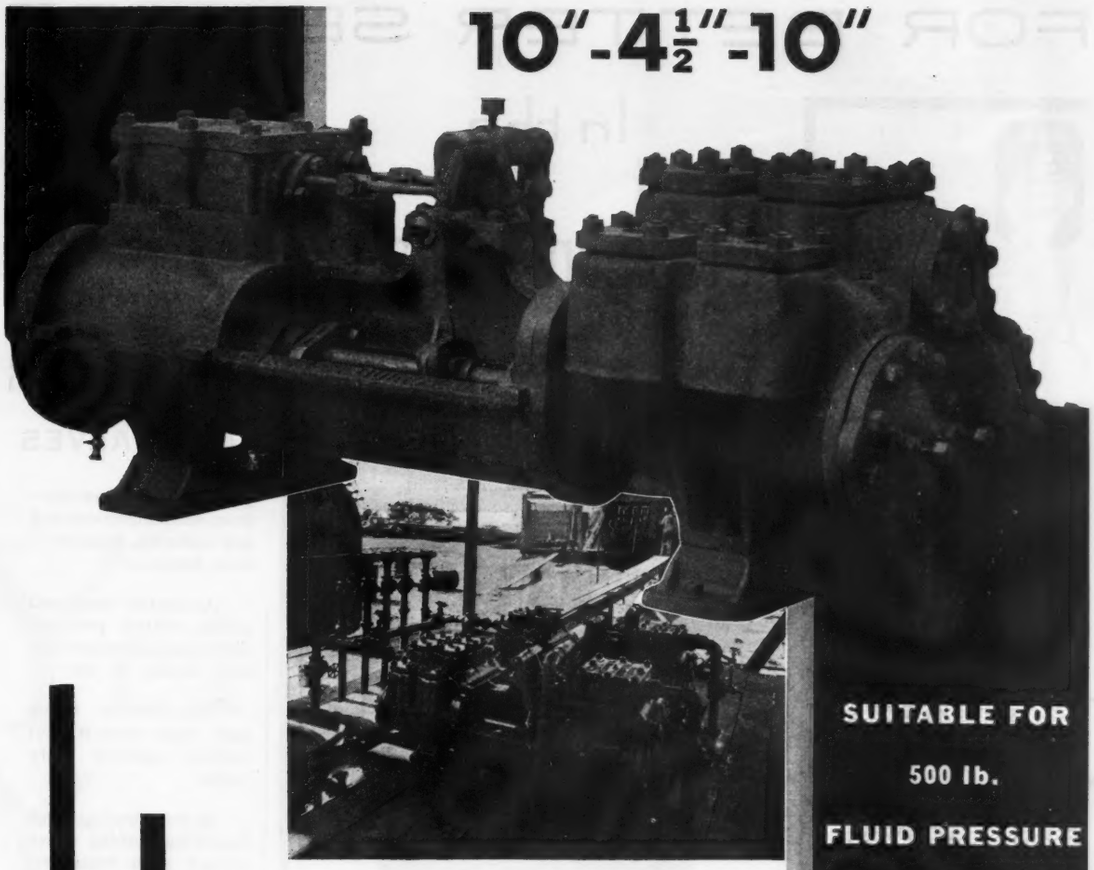
10"-4½"-10"



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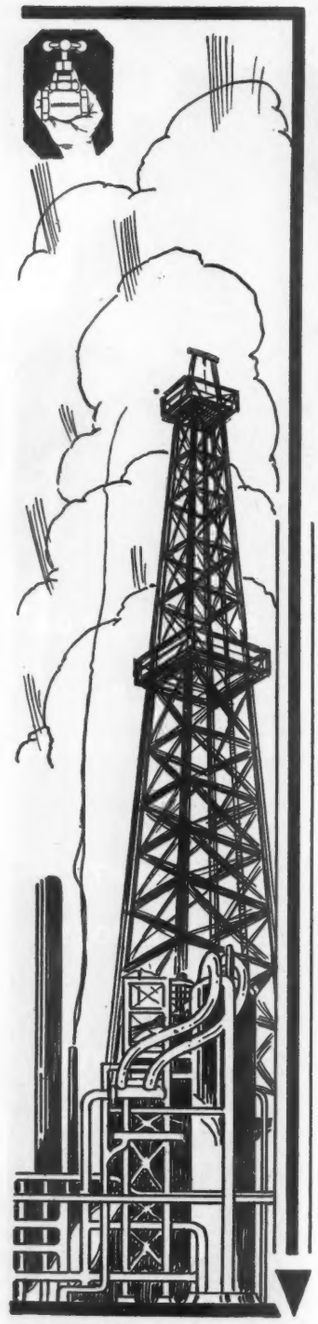

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provide better service—more efficient, economical and enduring, because of these features:—

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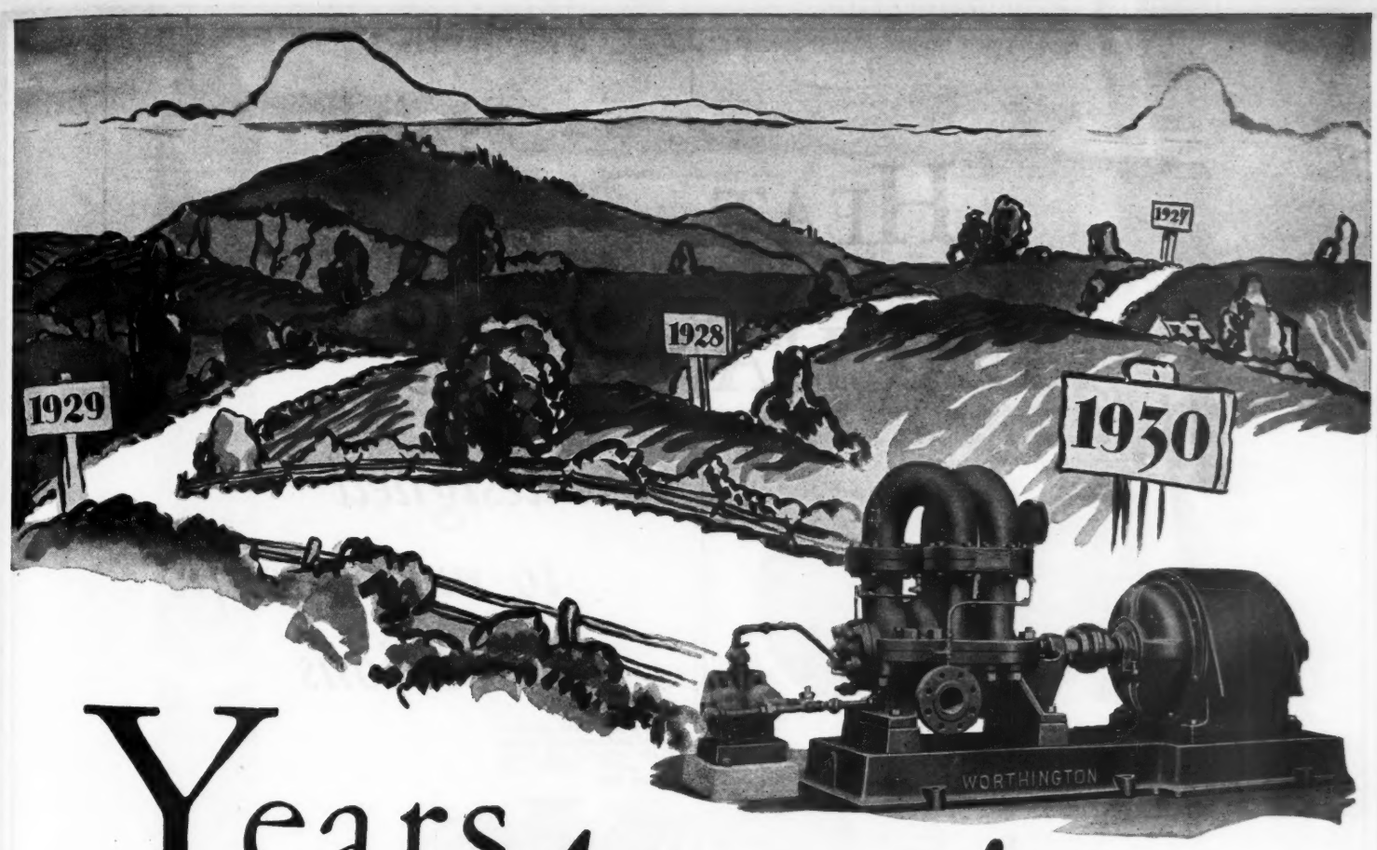

Years Ahead!

THE whole story of centrifugal oil line pumping is one of Worthington leadership. Look at the record . . .

In 1927 . . . Worthington built the first centrifugal pump designed especially to meet the exacting requirements of pipe line service. The loop interstage passage, the ball bearing single stuffing box and other modern features were combined to produce the three essentials . . . simplicity of design, reliability and high efficiency.

In 1928 . . . So successful were the Worthington Pumps that the industry went "centrifugal wild". Besides Worthingtons, many pumps of other designs, not suited to pipe line requirements, were installed.

In 1929 . . . The industry took the time to check performance and compare efficiency records . . . with the result that practically all of the pipe line pumps bought during that year were Worthingtons.

In 1930 . . . Other manufacturers are following Worthington's lead with designs incorporating the features pioneered in 1927. Meanwhile the Worthington designs have been refined to the utmost degree. Worthington's latest achievement is the development of a 45,000 bbl. pump with the highest known efficiency record. The manufacturers attempting to copy Worthington designs will have great difficulty in approaching Worthington's efficiency.

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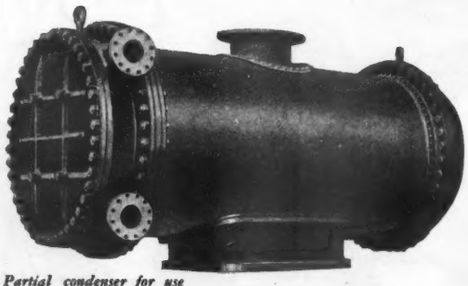
WORTHINGTON

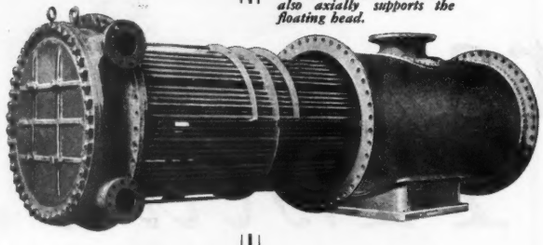
HEAT EXCHANGERS



Partial condenser for use with vacuum tower, showing large inlet opening at bottom.

. . . designed to meet specific conditions

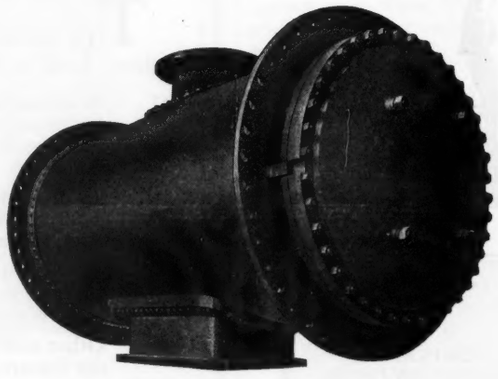
Tube bundles are easily removed and inserted by means of the internal rail which also axially supports the floating head.



EVERY heat-exchanger built by Westinghouse is designed especially to meet the specific conditions of each application because every refinery has its own problem for apparatus of this type. In this way, maximum economy is secured in each installation.

The heat-exchangers illustrated are built with an internal rail to facilitate the removal and insertion of tube bundles, and to axially support the floating head. The rail also effects a more positive seal for the baffle.

Complete information on these heat-exchangers can be obtained at our nearest district office.



The floating end of the heat exchanger showing supporting rail.

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"With cores to study, geologists may identify the strata, determine elevations, and examine oil-bearing formations for their porosity and saturation.

"The practical operator can obtain more information from these cores than a trained geologist has heretofore secured from microscopic study of well cuttings."

Baker Cable Tool Core Barrel

Operators all over the world are using the Baker Cable Tool Core Barrel—Russia, Australia, Mexico, far-away Papua—because they have found that it gives unusual service and is built so strong in every particular that it will "stand the gaff".

These operators know, from experience, that they can depend upon the Baker Cable Tool Core Barrel to bring to the surface a maximum percentage of perfect, uncontaminated core, no matter what the type of formation in which they are drilling.

There are two kinds of very important information which make coring necessary: 1. The lithological character of a formation can be ascertained more readily and more accurately than in any other way. 2. Many characteristics of formations and minor structural features are utterly lost in cuttings, but revealed perfectly in an uncontaminated core.

The Baker Cable Tool Core Barrel is noted for its efficiency and economy of operation, and for its effectiveness in coring in any type of formation.

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When it comes to making up and running Reading 5-Point Casing into a hole, you'll find out what Genuine Puddled Wrought Iron means in time saving and labor saving. Clean, sharp, uniform threads—a feature which has made this casing famous—eliminate trouble and delay, regardless of the length of casing you set.

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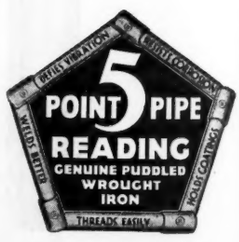

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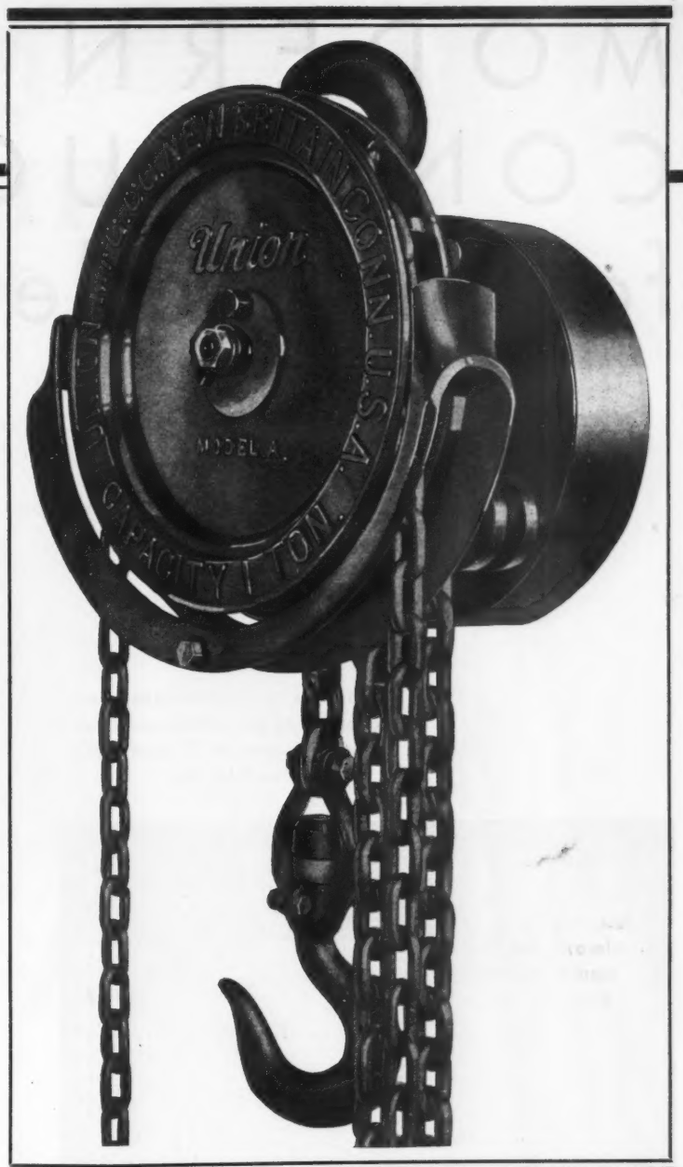

They are faster in operation, stand exceptional abuse, and their design minimizes wear on all moving parts. Consider these specific advantages:

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Solid pressed steel plate suspension instead of usual malleable iron with steel straps.

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Roller load chain sprocket designed to fit links perfectly, offering minimum friction and making "wedging" impossible.

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UNION MANUFACTURING CO.
We should like to have a copy of the UNION Chain Hoist Catalog containing full details and prices.

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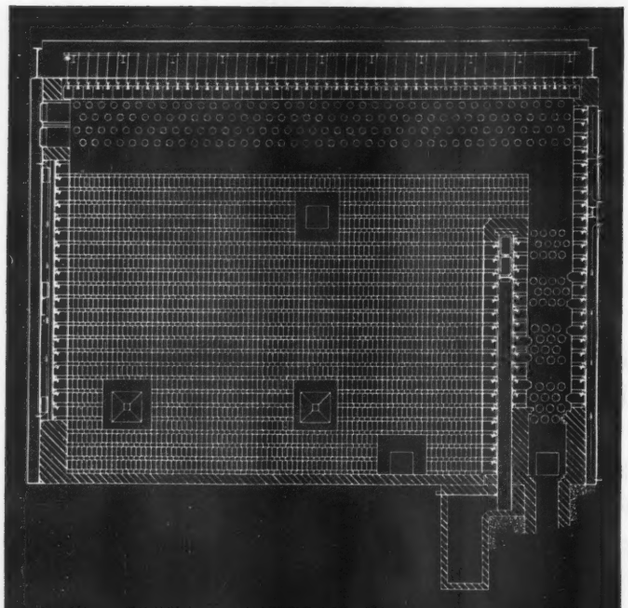
MODERN FURNACE CONSTRUCTION for the modern refinery

Long life, low maintenance and adaptability are characteristics of Bigelow Suspended Furnace Walls and Arches.



BIGELOW-LIPTAK PRODUCTS

Bigelow Suspended Wall, Liptak Type "X" Wall, Liptak Double Suspension Arch, Bigelow Suspended Arch, Liptak Single Suspension Arch.

THE modern refinery is characterized by its low costs . . . low costs that are necessary to show a manufacturing profit under the highly competitive conditions of today. Modern furnace construction is essential in securing such low costs.

Bigelow-Liptak offers modern furnace construction . . . suspended walls and arches that have long life—that seldom require shutdowns for repair—that are adaptable to individual furnace requirements making it unnecessary to compromise the most efficient furnace design.

Bigelow-Liptak has long realized that one type of wall and arch construction will not give the best results in all kinds of furnaces and under all operating conditions. That is the reason for the different types of Bigelow-Liptak Walls and Arches listed at the left.

Here are a few facts about Bigelow-Liptak construction:

1. Each tile of the Bigelow (Air Cooled) Wall is individually supported; expansion and contraction is completely compensated so that the wall does not crack.
2. The Bigelow Arch can be given any desired contour and openings are readily provided wherever wanted. It can be installed and maintained from outside the furnace—important where roof tubes are used.

The foregoing facts are intended simply to indicate that there is a Bigelow-Liptak Wall and Arch for every modern refinery furnace. Complete information will be supplied on request and competent engineering service is available to help you solve refinery furnace problems.

BIGELOW-LIPTAK CORPORATION
5057 WOODWARD AVENUE DETROIT, MICHIGAN
Sales offices in Principal Cities—Main European Office: Liptak Furnace Arches, Ltd., 38 Victoria Street, London, S. W. 1, England

BIGELOW-LIPTAK

A SUSPENDED WALL AND ARCH FOR EVERY FURNACE

MISSION SLIPS

TOOK THE LIMIT OF TESTING MACHINE 200,000 POUNDS

In a recent test at Rice Institute, Mission Slips were subjected to the capacity of the Tinius Olsen Tension-Compression Testing Machine. How much greater load the Mission Slips would take, we do not know, since 200,000 pounds is the limit for this particular testing machine.

◆ ◆ ◆ ◆ ◆

This 200,000 pounds pressure is equivalent to . . . . 13,333 feet of 13.3 lb. 3 inch drill stem with 44 lb. A.P.I. tool joints on every joint . . . figured on the weight of the pipe hanging in the air.

PIPE REMOVED FROM SLIPS BY HAND

At the conclusion of the test the pipe was removed from the slips by hand. No other slip tested by this machine has ever permitted such ease in removal of pipe. Such results reflect the perfection of engineering design and balance of the Mission Slips and explain why much pipe is saved due to that quality in design which allows these slips to handle long strings of pipe without damaging same.

Mission Slips have proven over and over in the field that they do not damage drill stem by cutting or bottle necking.

INVESTIGATE NOW the money making advantages of using Mission Slips that pay for themselves over and over on the pipe they save.

PARTS

(1) Back Plate
(2) Dogs (Teeth)
(3) Body Bolt
(4) Body Nut
(5) Body Spring
(6) Handle
(7) Handle Pin
(8) Cap
(9) Cap Bolt
(10) Cap Spring
(11) Cap Spring Pin

Write for Complete NEW CATALOG Containing Prices and Types of MISSION SLIPS

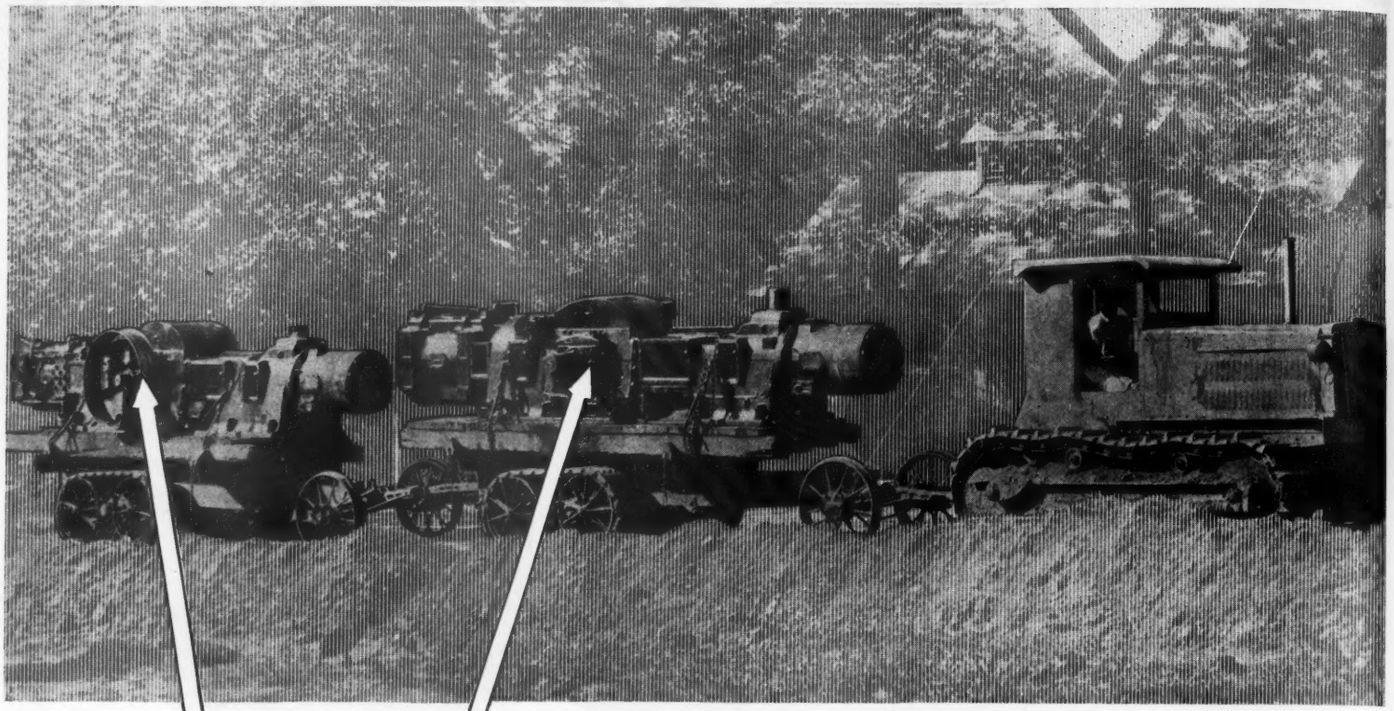
Distributed by

Republic Supply Company

OIL AND GAS WELL SUPPLIES

Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS



25 tons

20 tons

45 TONS

Some Load

OVERLOADS are, of course, always to be avoided but occasionally emergencies arise where definite capacities must be overlooked. Such a condition is shown here — 45 TONS — being handled by two 15-ton Atheys and one tractor. Can there be any better proof of the tremendous strength and added factor of safety built into Athey wagons than their performance under this 50% overload?

Atheys are built in five capacities—3, 5, 10, 15 and 20 tons—to meet every practical heavy hauling job. By connecting them in train, these capacities can be increased to 20-30-40 tons and more.

Atheys are easy on tractors. Maintenance costs are reduced by Athey's light running qualities—you can haul twice the load with 50% less tractive power. Their all-steel construction and adaptability to all kinds of loads and roads give them a surprisingly long life and daily usage.

You'll be surprised how the many practical operating advantages of Athey Truss Wheel Wagons will cut your hauling costs. Write — and we'll tell you.

ATHEY TRUSS WHEEL CO.
130 No. Wells Street,
Chicago, U.S.A.

Cable Address: "Trusswheel", Chicago

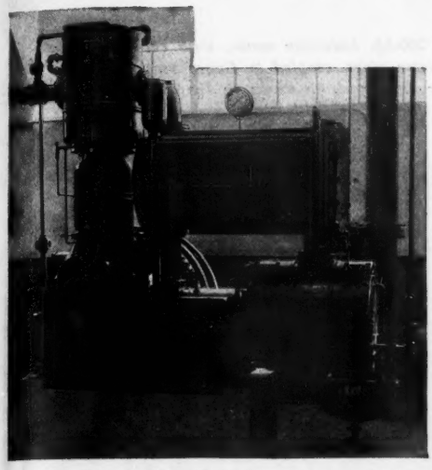
The Baldwin Locomotive Works, Foreign Representatives, Philadelphia, Pa.

ATHEY TRUSS WHEEL WAGON

IT BRIDGES THE SOFT SPOTS

Exploration, Storage, Distribution, Refining

in every step of oil country operation costs are cut with Sullivan Equipment



Sullivan Balanced Angle Compressor, one of several in a large refinery.

Sullivan Compressors Speed Refining of 81% of Industry's Lubricants

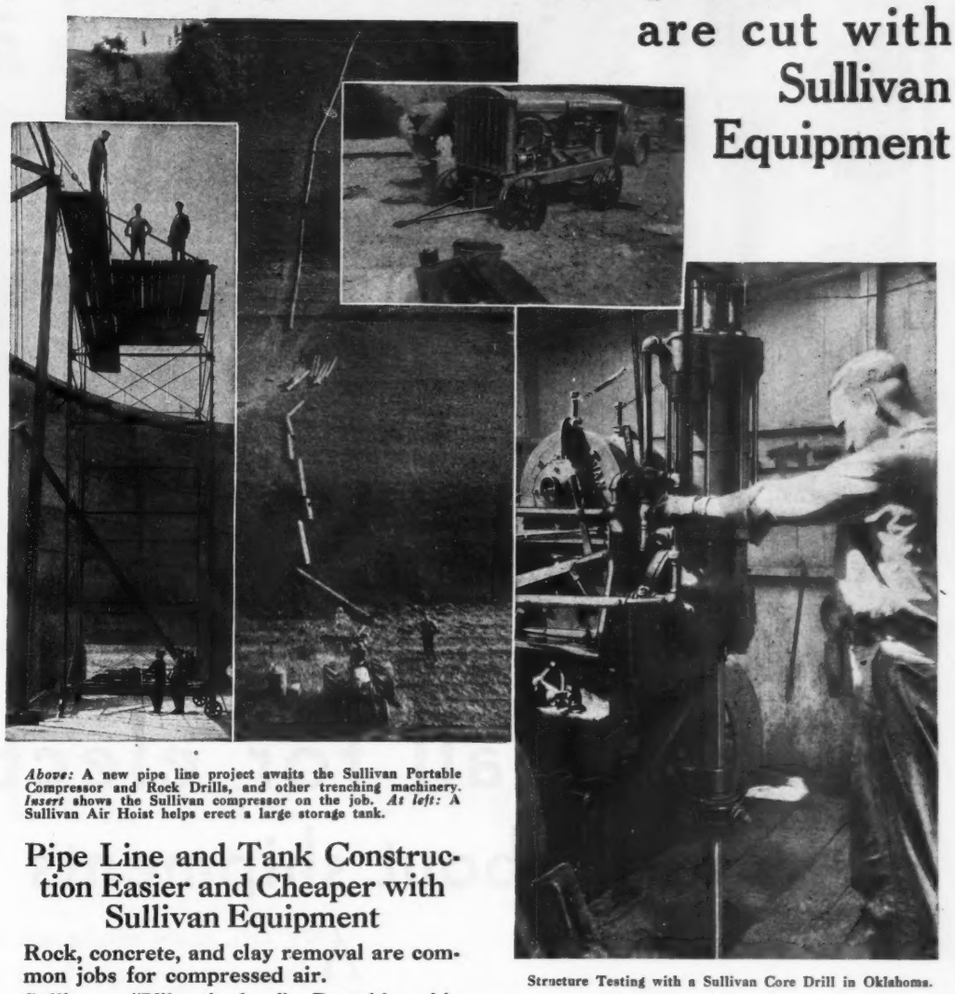
With compressed air for activating sludge, pumping oil, testing cans, and other important tasks for the refinery—it is interesting to note that many of the largest refiners have adopted Sullivan Balanced Angle Air Compressors.

The distinctive thing about these compressors is that one cylinder is set horizontally, and the other vertically. By thus balancing reciprocating forces, vibration is eliminated, with a saving in power, wear, and foundations.

Balanced Angle Compressors are adapted to belt drive, or to direct connection to motor or oil engine. Capacities 287 to 5900 feet.

Catalog 83-J.

Sullivan Compressors are also available in many types, for repressuring, gas lift, pipe line, gasoline extraction, etc.



Above: A new pipe line project awaits the Sullivan Portable Compressor and Rock Drills, and other trenching machinery. *Insert* shows the Sullivan compressor on the job. *At left:* A Sullivan Air Hoist helps erect a large storage tank.

Pipe Line and Tank Construction Easier and Cheaper with Sullivan Equipment

Rock, concrete, and clay removal are common jobs for compressed air.

Sullivan "Vibrationless" Portable Air Compressors and a wide range of rock drills, concrete breakers, and clay diggers, are speeding construction.

The superior dependability of the Vibrationless Compressor is a big asset for oil and natural gas enterprises, where equipment is isolated from (skilled) repair shops, and speed is vital.

Sullivan compressors are available in 66, 110, 160, 220, 310-ft. sizes, on steel wheels, trailer trucks, or skids.

Sullivan Hoists, your choice of twenty models, air and electric, one or two drums, are ready to speed tank erection.

Send for the picture book "Speed Up With Air"

Structure Testing with a Sullivan Core Drill in Oklahoma.

Oil Exploration Costs Reduced with Sullivan Core Drills

Selection of rich leases, quick spotting of favorable highs, test wells at 15 to 20 per cent of the cost of other drilling methods: those are the things Sullivan Core Drills are giving shrewd oil men today.

There is no need to hold doubtful leases, when cores obtained with Sullivan "21", or "40" Drills will tell you quickly whether or not favorable structure is present. These same structure drills also reveal the likely spot for wells, by deeper tests on structure.

Deep tests are made with the Sullivan "60" saving thousands of dollars on dry holes which easily pay the cost of redrilling when a strike is made. Casing seats are picked. Gas pressure is controlled. Sullivan "60" will make open hole to 6000 feet, or set 5500 feet of 11¾ in. casing; other sizes in proportion.

Send for Structure Testing Booklet, No. 85-K, Deep Tests and Wildcats, No. 85-H.

SULLIVAN OIL INDUSTRY EQUIPMENT

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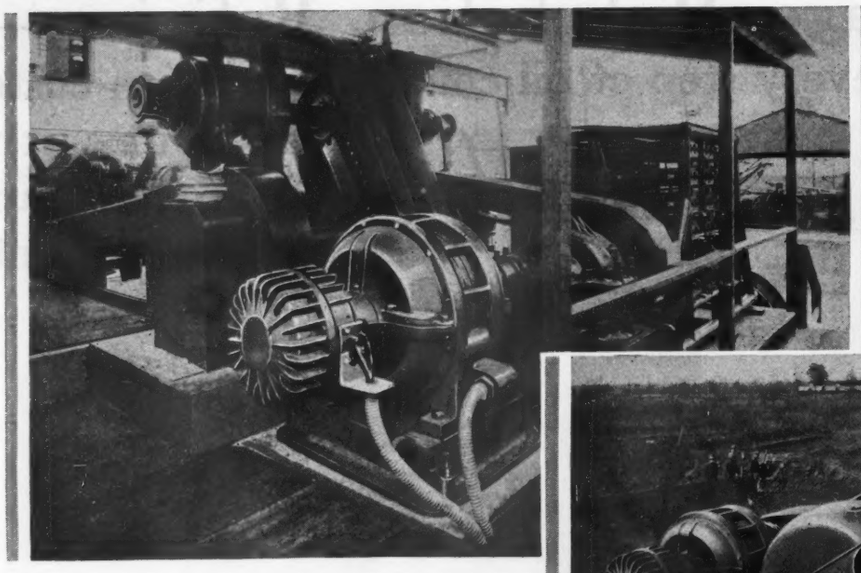
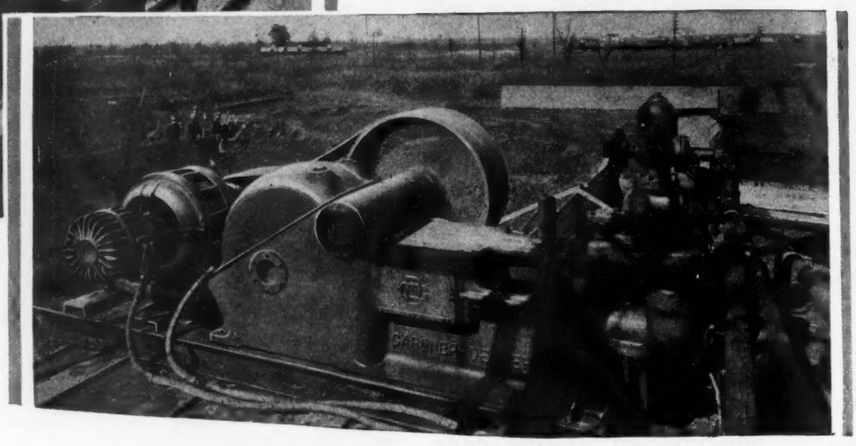


GE 200-hp. induction motor, with enclosed collector rings, coupled to Emsco reduction gear driving draw works on Emsco rotary drilling rig



G-E 200-hp. motor with enclosed collector rings, driving Gardner-Denver mud pump. Note compact assembly of motor and pump

"We are all for electric drilling —but what about shipments and service?"

ANY OIL MAN might ask that—and many have. And they have found a satisfying answer in the fact that General Electric maintains a far-flung sales and service organization capable of meeting the demands of every major industry for electric equipment.

General Electric manufactures complete drives for all types of drilling operations, including motorized draw works, mud pumps, oil and water pumps, and the like. Every piece of equipment is built and installed on the principle of more footage per tour at minimum cost for power, general operation, and maintenance.

Oil-field specialists of either the General Electric Company or its representative, the Continental Supply Company, are readily available in the fields, and can give you information about G-E equipment. In most cases your needs can be met direct from stock, at a warehouse near you.

General Electric supplies complete electric equipment to the oil industry. With warehouse facilities close to your operations, G.E. readily furnishes motors, controllers, transformers, and other electric equipment. You are always assured full value from your investments in electric drive.

G-E oil field specialists at: Abilene, Amarillo, Bakersfield, Beaumont, Buffalo, Butte, Dallas, Denver, El Paso, Fort Worth, Houston, Kansas City, Los Angeles, Odessa, Oklahoma City, Pittsburgh, San Antonio, San Francisco, Shreveport, Tulsa, Wichita.

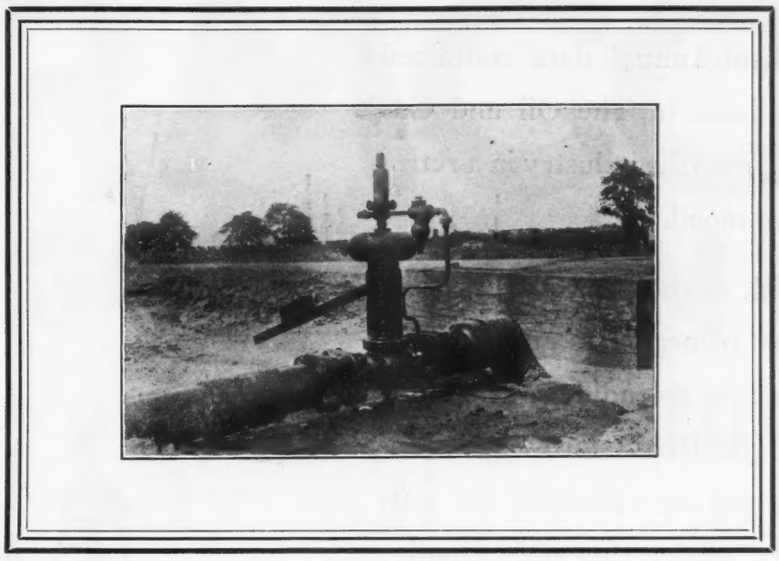
200-393A

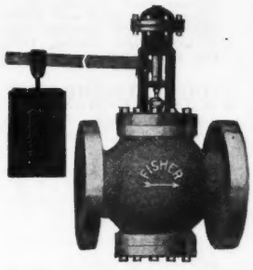
Join us in the General Electric program, broadcast every Saturday evening on a nation-wide N. B. C. network

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

"A FISHER DESIGN IN EVERY LINE"





in the OKLAHOMA CITY FIELD

The Fisher Type 405 Gas Regulator shown above is now extensively used in the Oklahoma City field, where accurate control of initial pressures as high as 2,500 pounds, and reduced pressures of 1,000 pounds is demanded.

The accurate regulation of these pressures with the Type 405 is made possible through the use of the Fisher extra heavy Type 777 pilot valve. The massive body construction, powerful lever ratios, and corresponding strength built into every part make this Type 405 a real high pressure regulator that insures safety to anyone working near the installation.

Fisher Bulletin G-28 describes in detail the Type 405 Regulator, as well as other Fisher automatic specialties for the Gas Industry. Write for it. Our engineering staff, and representatives are always ready to assist you in solving pressure control problems.

THE FISHER GOVERNOR COMPANY
900 FISHER BLDG. . . . . MARSHALLTOWN, IOWA

HANLON-WATERS
INC.
General Offices: TULSA, OKLA. *Box 1404*
HOUSTON FORT WORTH

We renew a Pledge!

The Semi-Annual data contained in this issue of The Oil and Gas Journal puts the industry in a retrospective mood.

We wish to thank producers, contractors, transporters and refiners, then, for the splendid growing business Frick-Reid stores have enjoyed, and to reiterate our oft-repeated pledge that only Quality Products shall pass our portals.

The list of manufacturers we represent constitutes the most binding guarantee and the most alluring invitation ever extended by a major supply company in the history of the petroleum industry.

AXELSON MANUFACTURING CO., LTD.
Sucker Rods, Pull Rods, Plunger Working Barrels (Pumps), Stuffing Boxes, etc.

BEAUMONT IRON WORKS COMPANY
Dreadnaught Rotary Equipment. Water-cooled Drawworks; Timken Bearing equipped Straight Line Crown, Traveling and Tubing Blocks; Pumping Hoists; Electrically Driven Bailing Line Reels; Structural Steel Walking Beams with patented Internal Truss Brace; Steel Pitmans; Pipe Sampson Posts; Casing Shoes, Clamps, etc.

DONOVAN BOILER WORKS
Oil Country Boilers and Tanks. Boilers range from 30 HP 150 lbs. WP to 125 HP 350 lbs. WP for the deepest and hardest drilling demands.

FRICK-REID SERVICE BELTING
Friction Surface Rubber Belting made to our own specifications.

JONES & LAUGHLIN STEEL CORPORATION
Tubular goods including Butt-welded, Lapwelded and DOUBLE PIERCED Seamless Steel in Line Pipe, Tubing, Drill Pipe and Casing.

NATIONAL TRANSIT PUMP & MACHINE COMPANY
Pumps, Gas Engine Compressors, Pipe Line Equipment, etc.

WILLIAM POWELL COMPANY
Valves for the Petroleum Industry.

J. P. RATIGAN
The "SURE GRIP" line of pumping equipment including Grips, Clamps, Beam Hangers, etc.

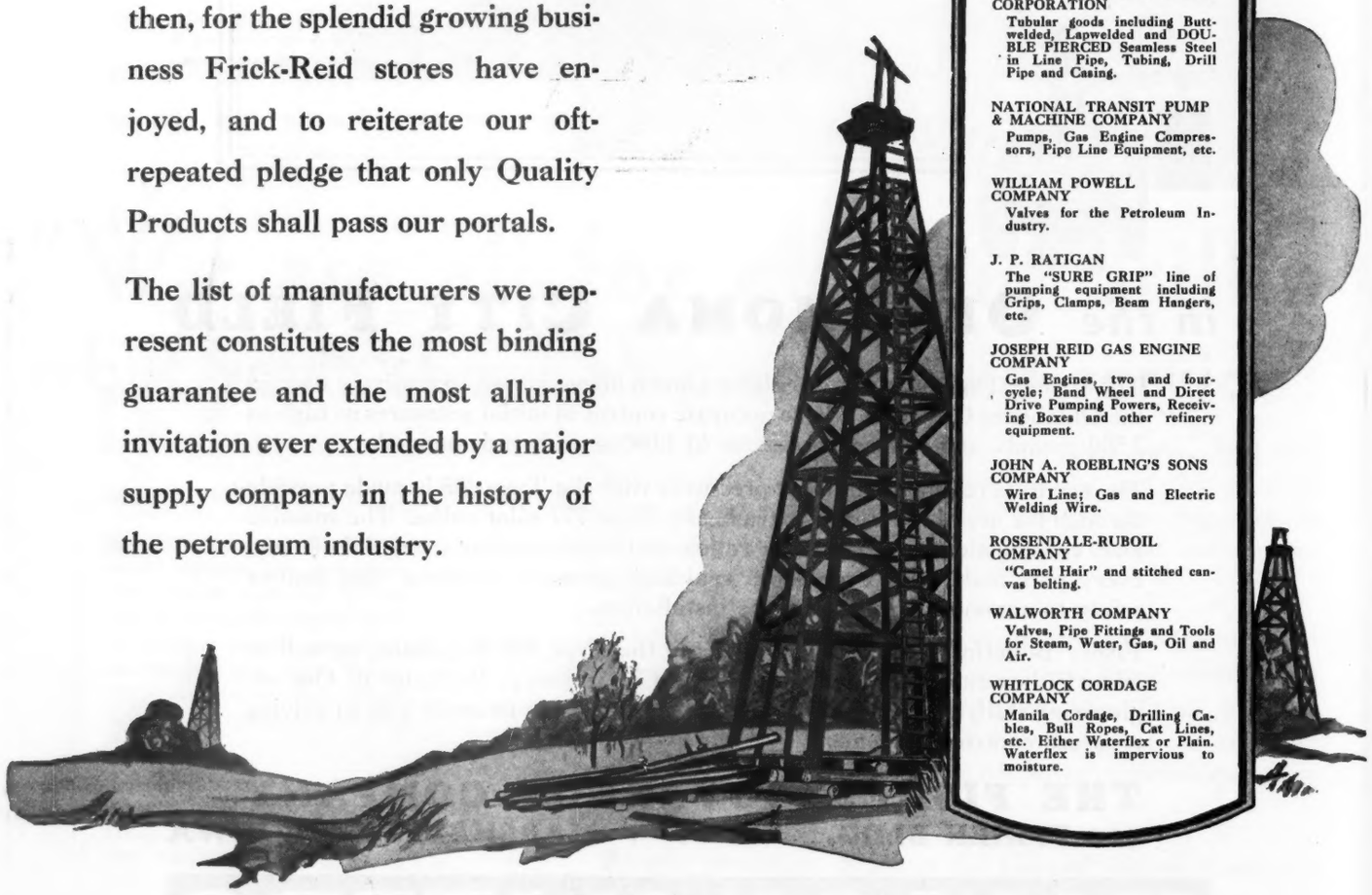
JOSEPH REID GAS ENGINE COMPANY
Gas Engines, two and four-cycle; Band Wheel and Direct Drive Pumping Powers, Receiving Boxes and other refinery equipment.

JOHN A. ROEBLING'S SONS COMPANY
Wire Line; Gas and Electric Welding Wire.

ROSSENDALE-RUBOIL COMPANY
"Camel Hair" and stitched canvas belting.

WALWORTH COMPANY
Valves, Pipe Fittings and Tools for Steam, Water, Gas, Oil and Air.

WHITLOCK CORDAGE COMPANY
Manila Cordage, Drilling Cables, Bull Ropes, Cat Lines, etc. Either Waterflex or Plain. Waterflex is impervious to moisture.



FRICK-REID
SUPPLY CORPORATION

Pittsburgh, Pa. **Tulsa, Okla.** **and Branches**

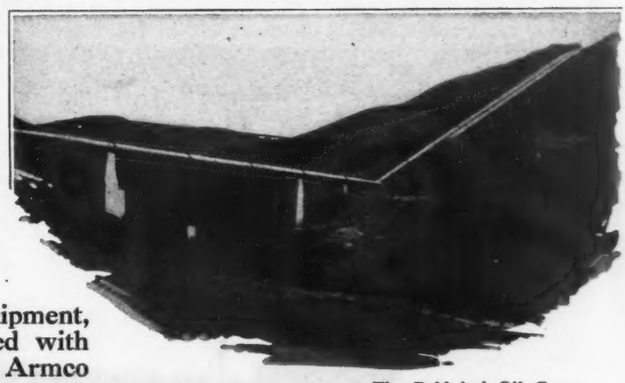
ARMCO INGOT IRON

....if you are struggling with costly maintenance

YOU need not keep paying and paying to the grim toll-taker, corrosion. There is an economical way out, whether you require plates for crude oil tanks, well casing and pipe, or tank tops, agitators and weak acid towers. Standardize on Armco INGOT IRON; the metal with the longest record of *actual service* of any low cost, rust-resisting plates and sheets made.

If you build or maintain your own equipment, there are other advantages coupled with long-time, inexpensive performance. Armco INGOT IRON is soft and workable, consistently uniform, and it welds speedily and firmly.

An Armco Engineer is ready to study your requirements and give you the benefit of his long training and experience in solving difficult metal problems. He is available at any of the offices listed below.



The Bakhtiari Oil Company, Ahwaz, Persia, used 12,000 feet of 30-inch Armco INGOT IRON pipe in this field line. They chose wisely; for Armco INGOT IRON'S splendid twenty-three years performance record justifies their investment in this durable metal.

THE AMERICAN ROLLING MILL CO.

Executive Offices: Middletown, Ohio

Export: The ARMCO International Corporation

DISTRICT OFFICES:

Chicago	Detroit	Pittsburgh
Cincinnati	New York	St. Louis
Cleveland	Philadelphia	San Francisco
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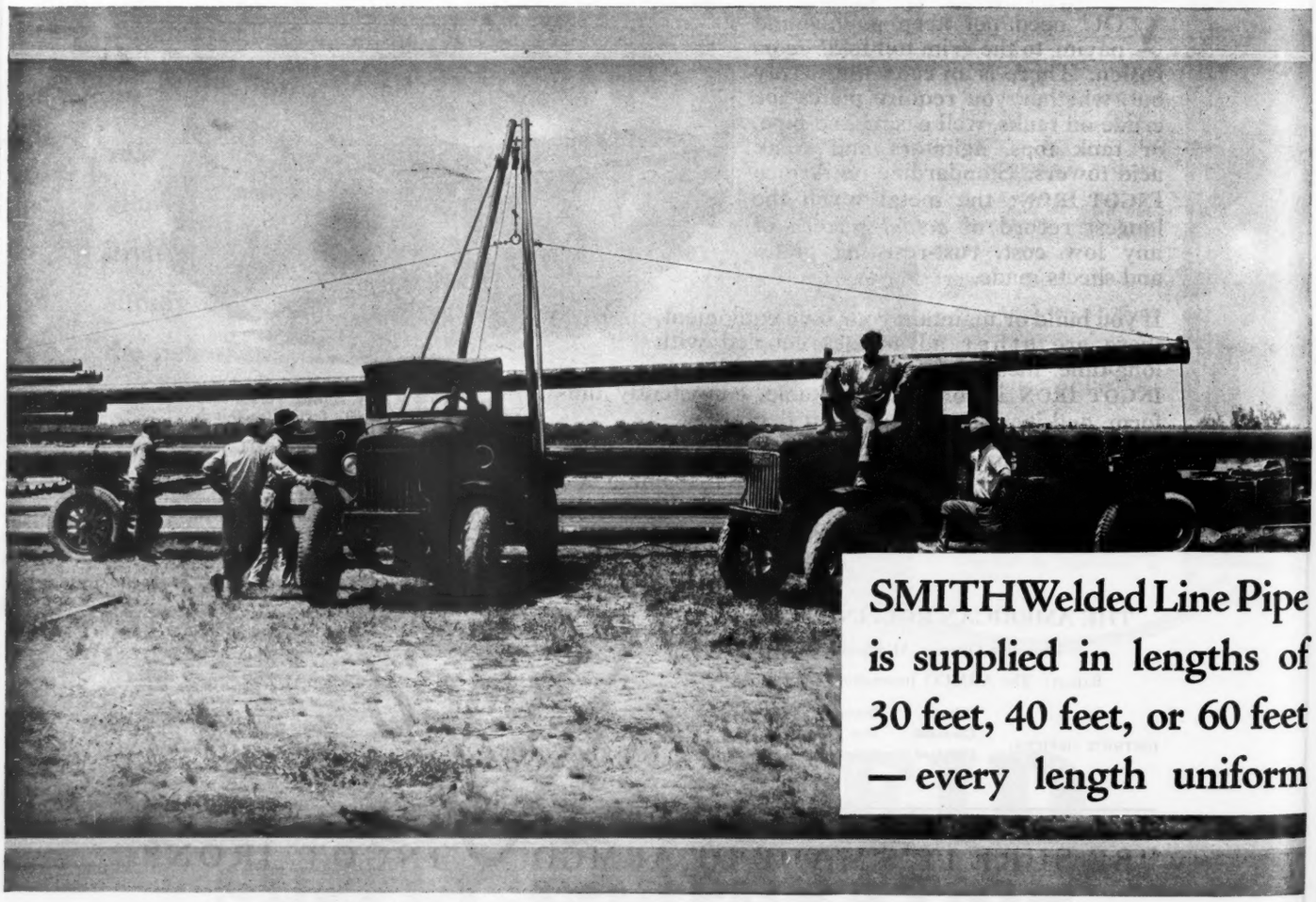
ARMCO

Back of this familiar symbol is nearly thirty years' experience in the manufacture of special analysis iron and steel sheets and plates. When you want a rust-resisting, low-cost metal, be sure to see this triangle and the words, "Armco INGOT IRON." It is your assurance of dependable, economical service.

"BE SURE IT'S MADE OF ARMCO INGOT IRON"

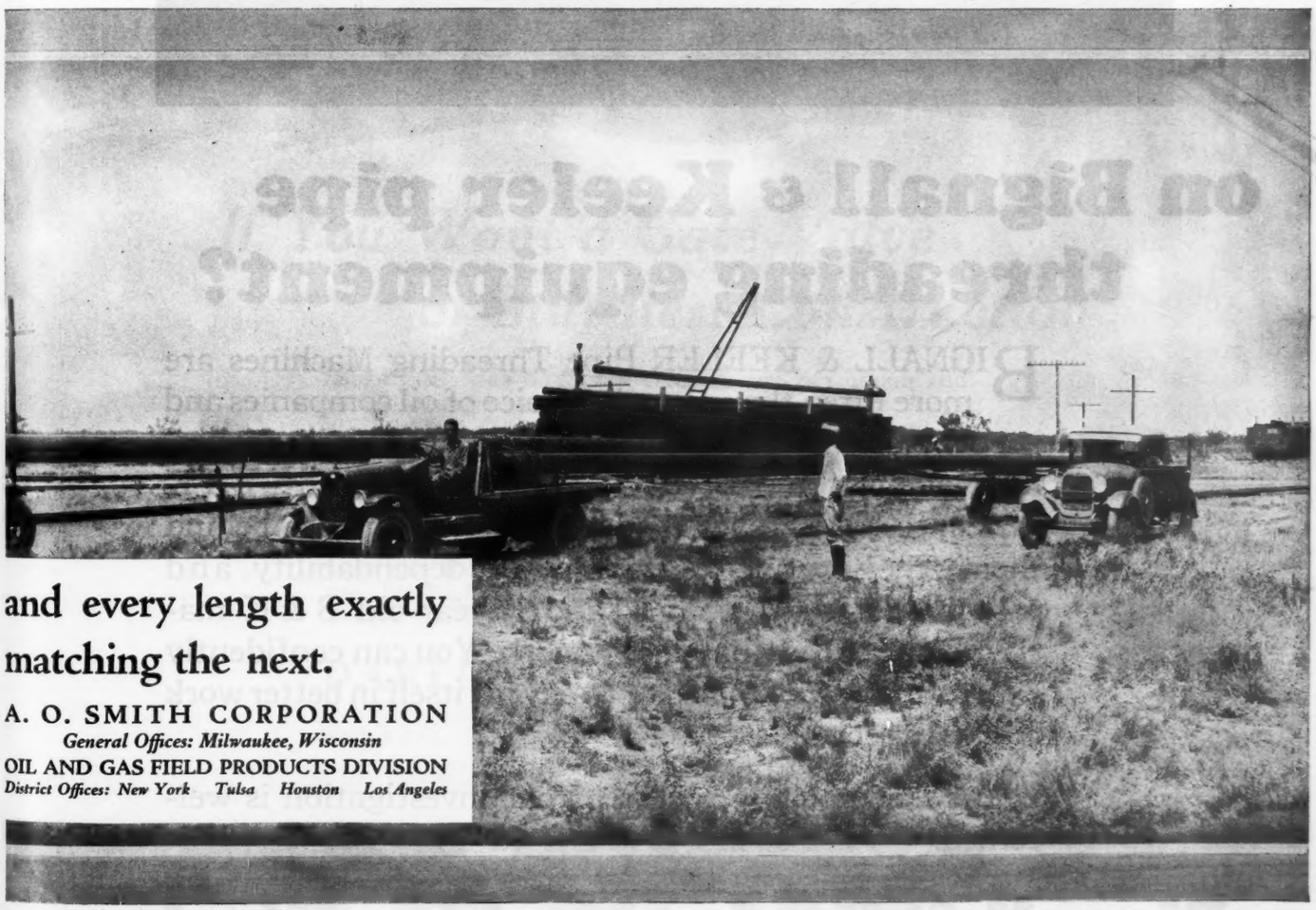
30·40·



SMITH Welded Line Pipe is supplied in lengths of 30 feet, 40 feet, or 60 feet — every length uniform

SMITH WELDED

60 FOOT LENGTHS



and every length exactly matching the next.

A. O. SMITH CORPORATION
General Offices: Milwaukee, Wisconsin
OIL AND GAS FIELD PRODUCTS DIVISION
District Offices: New York Tulsa Houston Los Angeles

GAS LINE PIPE

Why not standardize

on Bignall & Keeler pipe threading equipment?

BIGNALL & KEELER Pipe Threading Machines are more often than ever the choice of oil companies and supply men who are standardizing their threading equipment and working for best quality and lowest cost. B & K machines have 50 years of proven performance behind them. They are unequalled in speed, dependability, and ease of operation. Many 20 and 30-year-old B & K machines are still doing perfect work. You can confidently expect any B & K machine to pay for itself in better work and lower costs.

PEERLESS B&K DUPLEX P.D.Q.C

Let us send you our catalog. Your investigation is welcomed.

Bignall & Keeler Machine Works
of the N. O. Nelson Mfg. Co.
Edwardsville, Ill.

OGJ 7-31 Gray

If You Want a Gate Valve of Sturdiest Construction

select one made of forged steel so you can obtain additional strength without adding to the weight. Forged steel is free from piping, sand holes, porous spots and other flaws hidden in the average castings.

Darling Forged Steel Gate Valves have all the splendid features found in other Darling Gate Valves, plus the extra tensile strength of Forged Steel. If you are the least bit uncertain about the strength of your present valves under possible high pressures, equip your lines with Darling Forged Steel Valves. They will give you peace of mind.

DARLING VALVE & MFG. CO.

WILLIAMSPORT, PA.

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Mid-Continent Distributors

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GATE VALVES

From CROWN BLOCK to the SAND!

ANYTHING NEEDED IN CABLE OR ROTARY SUPPLIES CAN BE OBTAINED QUICKLY THROUGH A BRIDGEPORT STORE

May We Suggest that the Wire Line be .....

WILLIAMSPORT WIRE ROPE

Drill Lines - Sand Lines
Casing Lines - Rotary Lines

. . . In addition to products of our own manufacture . . Bridgeport maintains extensive stocks of the best known Oil Field Supplies of all descriptions, at stores in all the oil fields . . . . . Every Bridgeport Branch is prepared to fill your order for WILLIAMSPORT WIRE ROPE on short notice. Just ***Call or Wire Bridgeport . . . Collect.***

. . . and May We Call Attention to

BRIDGEPORT'S

Latest Contribution to Trouble-Free Oil Well Equipment

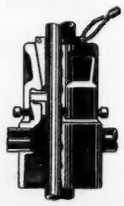
MOROIL PATENTED

***Shot Packed* STUFFING BOX**

New and superior design! Packed with shot, which, when mashed by the Taper, creates a soft, smooth metal bearing for the Polish Rod. No leakage, no frequent packing. See this new type Stuffing Box at your nearest Bridgeport Store.

TUBING SUPPORT

At last, a Tubing Support with a Positive Seal. Screws directly on the casing, eliminating the Casing Head. Rubber Packing Ring positively sealed and locked by 4 Set Screws. Manufactured by BRIDGEPORT—that's your assurance of Dependability. . . .

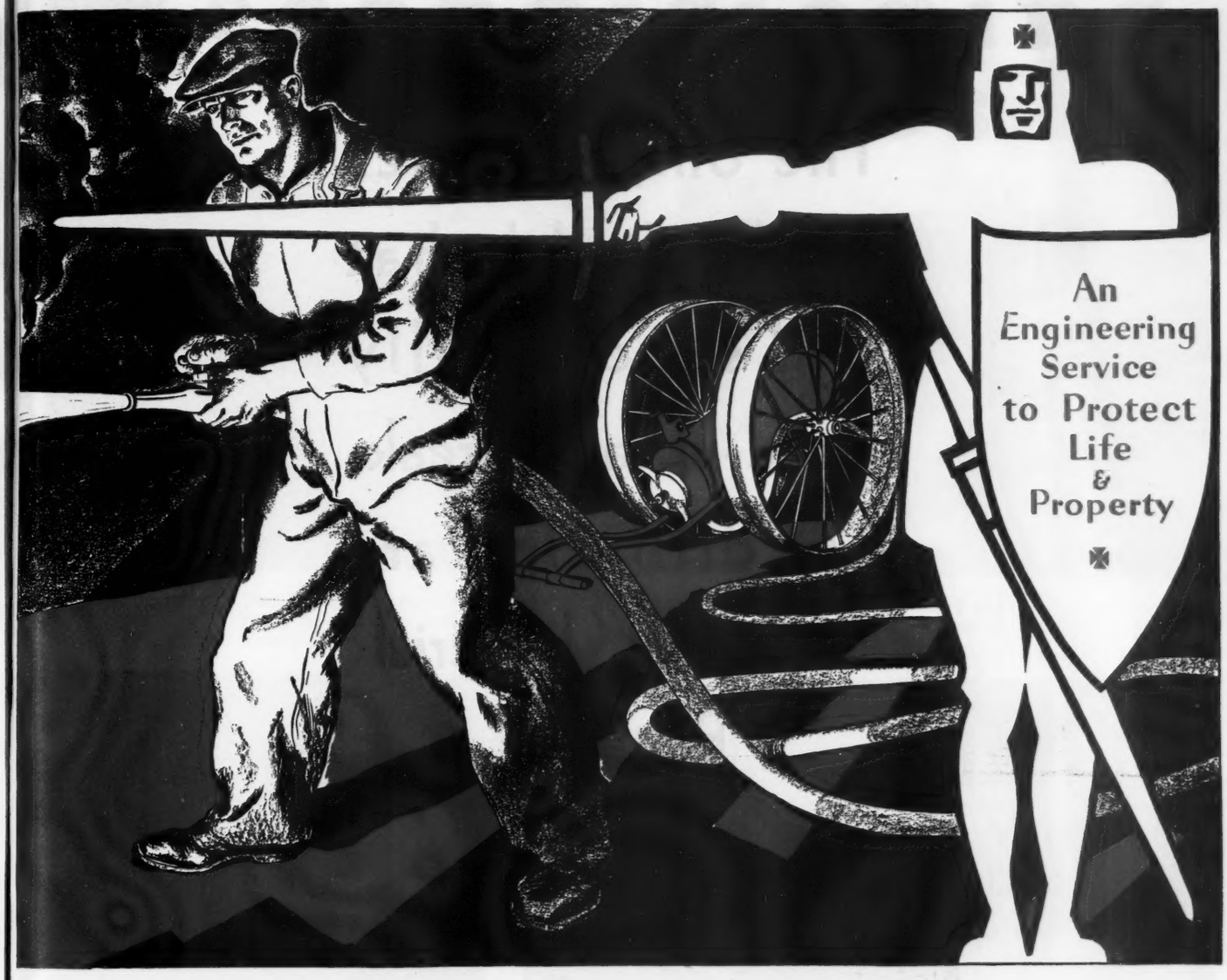


BRIDGEPORT MACHINE COMPANY
WICHITA KANSAS

MONARCH OF THE PLAINS

. . . . BRANCHES THROUGHOUT THE OIL FIELDS . . . .

FIRE — AN INCIDENT OR A DISASTER ?



"METERED" solutions mean more and better foam

Just as the carbureter on your car mixes air and gasoline in *measured proportions*—so the design of FOAMITE 40-gallon Engines mixes in *measured quantities* the two solutions that together make *Firefoam*.

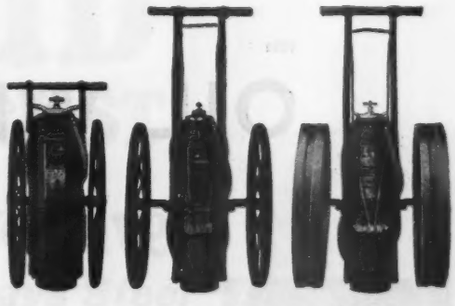
Throughout the discharge period, this carefully measured mixing goes on. The result is a longer period of effective discharge, a better quality of foam, and a *sustained* range from the nozzle for the entire discharge period—and more foam.

"Metering" is the secret of the superior performance of FOAMITE Engines. It is the same time-tested principle that has made the FOAMITE System so dependable for the protection of tank farms and refineries.

Representatives, who will be glad to demonstrate FOAMITE 40-gallon Engines are located near every principal oil producing and refining center.

You are cordially invited to visit the La France and Foamite booths, Nos. 95 and 96 in the Texas Building, at the 7th International Petroleum Exposition and Congress, Tulsa, October 4th to 11th.

AMERICAN-LA FRANCE AND FOAMITE CORPORATION, DEPT. F-43, ELMIRA, N. Y.

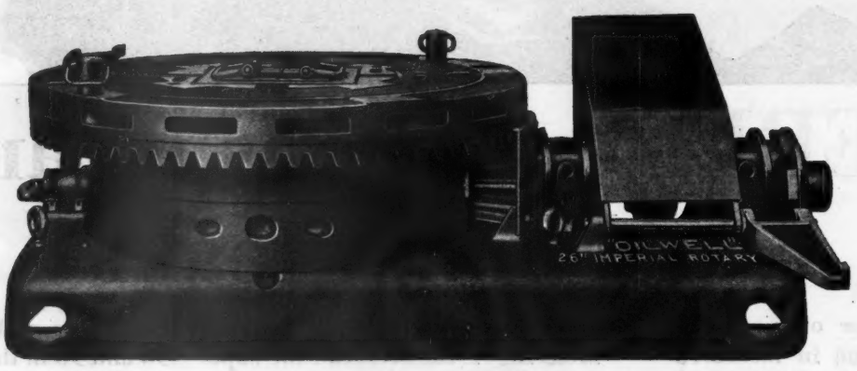


LA FRANCE AND FOAMITE PROTECTION

AN ENGINEERING SERVICE

AGAINST FIRE

The only Rotaries in the field that will successfully make-up and break-out drill pipe are "Oilwell" Imperial Rotaries



Made in three sizes: 26 inch, 20 inch and 17 inch

1353

OIL WELL SUPPLY CO.

Reconditioning Pipe Lines

The illustration above shows pipe on which a hardening coating failed, salvaged and ready for cleaning. It is significant that NO-OX-ID is being used in a great deal of reconditioning work.

The same pipe as shown above, now scraped and wire brushed ready for application of NO-OX-ID "G." *Now it can't rust!*

NO-OX-ID, the NO-OX-ID-IZED Wrappers and NO-OX-ID Service Coat are suitable for every soil condition and are serviced in the field by experienced Dearborn men.

DEARBORN CHEMICAL COMPANY

"A House of Chemical Engineers" In Its Forty-fourth Year of Service to Industry

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Canadian Offices and Factory: 2454-2464 Dundas St., West, Toronto

NO-OX-ID

IRON + OX = RUST

TRADE MARK

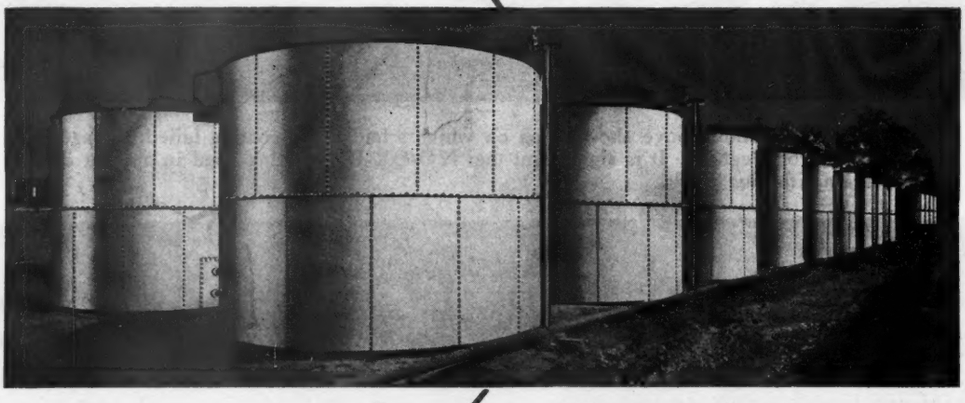
The Original Rust Preventive

"NO-OX-ID Treated Steel is Always Steel"

ALUMINUM

IS NOW STANDARD FINISH ON

BUTLER



BOLTED TANKS

• • •

Drane-Humphrey Co., at San Angelo, Ft. Worth, Big Spring, Pyote, Best and McCamey, Texas; and Hobbs, N. M.

Keyes-Butler Tank Co., of Casper and Cody, Wyoming.

Drane Tank Co., at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; El Dorado, Madison, Wichita and Valley Center, Kansas.

Muskegon Butler Tanks, Muskegon, Michigan.

Gulf Coast Tank Company, 1612 Moffit St., Houston, Luling, Refugio, Pettus and Grand Saline, Texas, V. P. Hughes, Prop.

Thomas Moran at Oil City, Shreveport, New Iberia, Lake Charles, Zwolle and Houma, Louisiana.

M. A. Trimmer, at Blackwell and Lovell, Oklahoma.

THE best is never quite good enough a foundation on which to rest the reputation of Butler Steel products. Constantly Butler engineers are striving, devising and testing for betterment.

The accumulative effect of this constant effort has brought about substantial design and flawless construction in Butler welded and bolted oil field tanks which adapt them extraordinarily well for all oil field, pipe line and many refinery purposes. Even the erection, cutting down and re-erection of bolted tanks are facilitated in the factory through precision forming and punching of interchangeable sections.

Now, new factory methods make possible ALUMINUM as standard finish on Butler Bolted Tanks. The preservative and preventative qualities of this finishing material are made an integral part of Butler value.

Operators who take pride in the appearance and efficiency of their leases naturally choose Butler aluminum finished tanks, cadmium plated stairways and runways and ready-made steel buildings. At the same time they effect economy—the substantial kind which comes from long wear, low maintenance, oil conservation and simplified portability.

Call a Butler field office for dependable day or night erection, cutting down or re-erection service.

STEEL BUTLER PRODUCTS

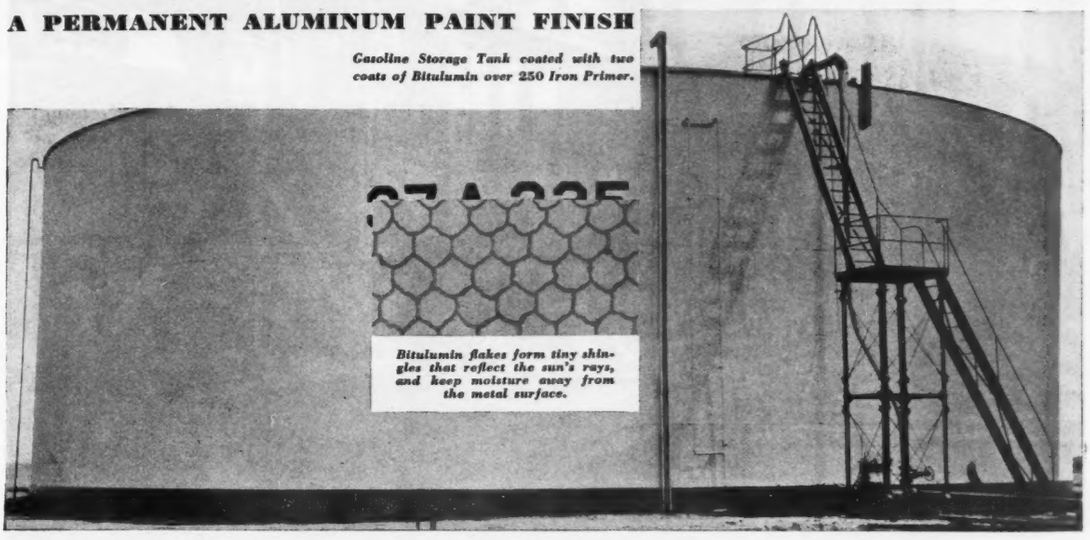
BUTLER MANUFACTURING COMPANY

1244 Eastern Avenue
Kansas City, Mo.

944 6th Avenue S. E.
Minneapolis, Minn.

BITULUMIN

A PERMANENT ALUMINUM PAINT FINISH



Gasoline Storage Tank coated with two coats of Bitulumin over 250 Iron Primer.

Bitulumin flakes form tiny shingles that reflect the sun's rays, and keep moisture away from the metal surface.

SHINGLED WITH ALUMINUM

The superior weather and sun-resisting qualities of Bitulumin are due largely to the specially developed Vehicle used as the base. This Bitulumin Vehicle is a perfect medium for Aluminum Powder, as it does not "binder-log" the tiny flakes, but permits perfect leafing action by which the minute particles of Aluminum form a metal plate over the whole surface. Under the microscope this aluminum-armored surface looks just like a perfectly shingled roof. Oil, gas and water tanks, tank cars, refinery and field equipment painted with Bitulumin *are* virtually shingled with Aluminum, which defies the evaporating influence of the sun, keeps out moisture, is impervious to acids and fumes and furnishes years of real protection.

Bitulumin is always shipped with the Powder and Vehicle in separate containers. Illustrated literature on request.

GENERAL PAINT CORPORATION

Specialists in the science of protective coatings for industry

Chicago—105 West Adams St. New York—11 Broadway San Francisco—160 Fremont St
Los Angeles—908 South Main St. Seattle—1406 Dearborn St.
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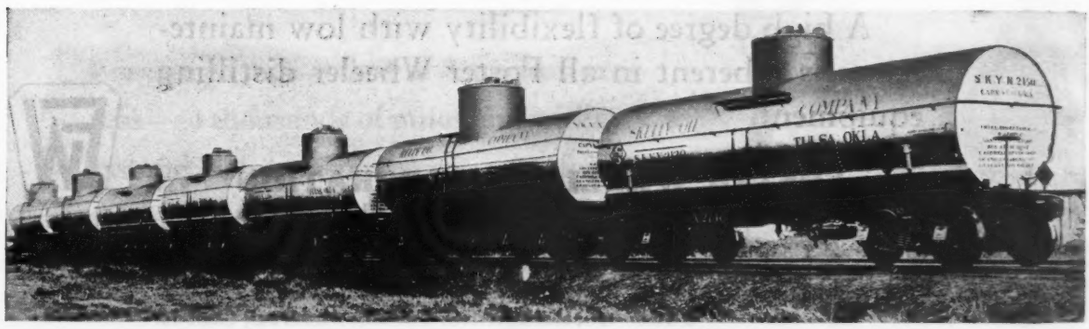
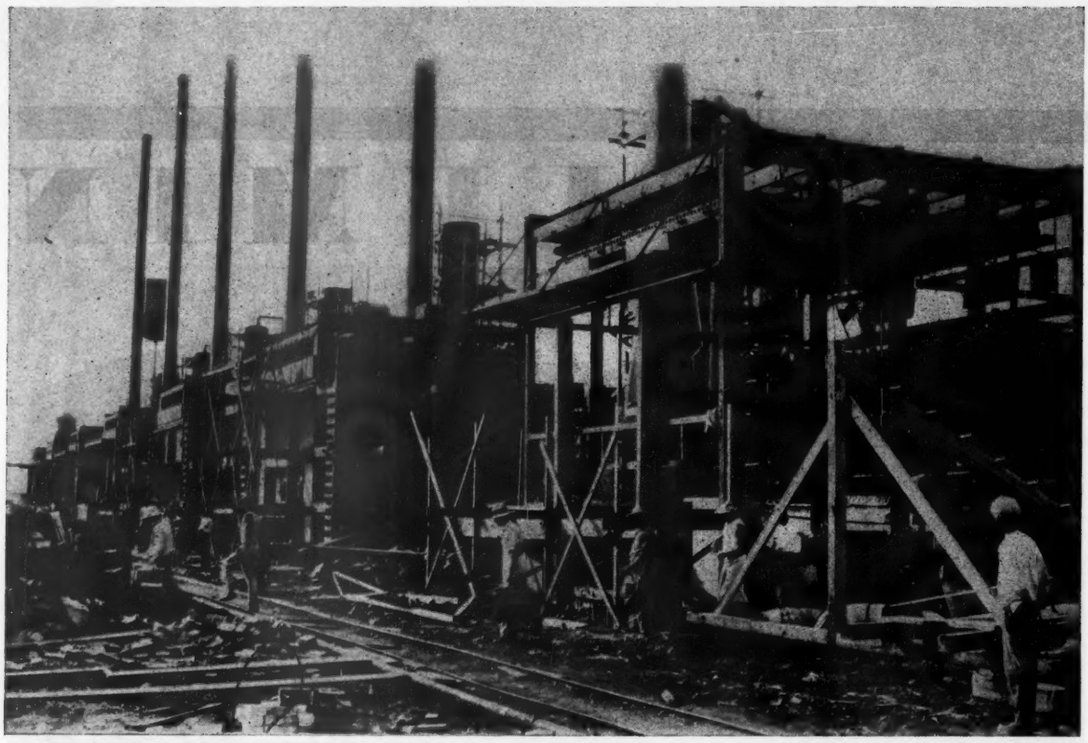
Export Department: *Head Office*—160 Fremont St., San Francisco, Calif., U. S. A.
Branch Office—No. 11 Broadway, New York, U. S. A.



Oil Tank Cars, Skelly Oil Co., coated with one coat of Bitulumin over 250 Iron Primer



Flexibility of Foster Wheeler Equipment

The Foster Wheeler tube stills illustrated above, in course of erection, were originally designed for topping units using Venezuela crude.

A change in the refining operation created an immediate demand for processing pressure distillate. The stills were placed in that service and are rendering results highly satisfactory to the operators.

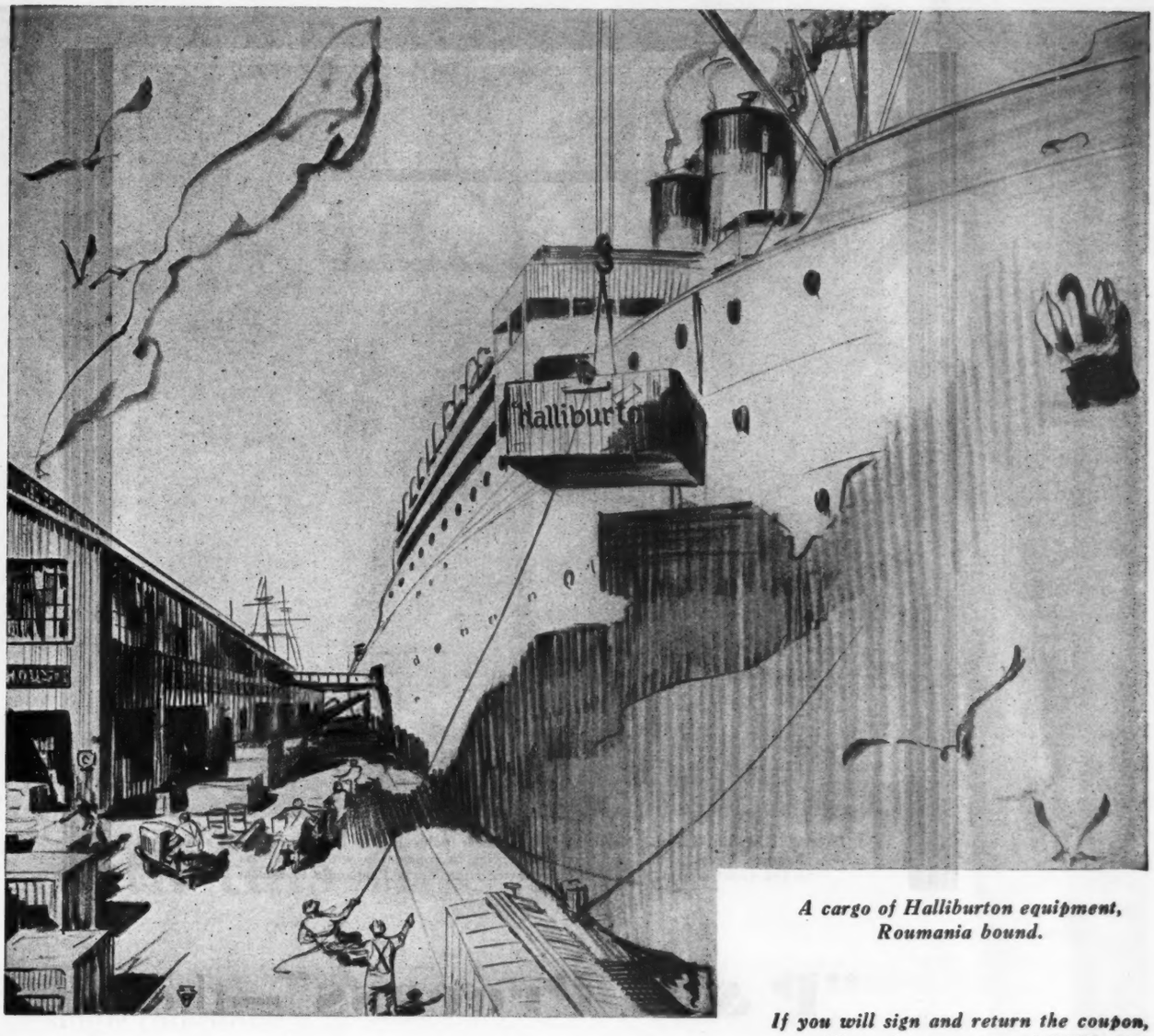
A high degree of flexibility with low maintenance is inherent in all Foster Wheeler distilling equipment.

FOSTER WHEELER CORPORATION
165 Broadway, New York, N. Y.

Branches in Principal Oil Centers

Foreign Associates: Foster Wheeler Limited, London England.
Foster Wheeler Limited, Toronto-Montreal, Canada.
Societe Anonyme Foster Wheeler, Paris, France.

FOSTER WHEELER



A cargo of Halliburton equipment, Roumania bound.

Each year an increasing amount of Halliburton equipment finds its way aboard giant liners for transport overseas.

Foreign oil men—alert to American progress—go thousands of miles and willingly assume high transportation costs, for the same type of cementing service rendered by Halliburton in domestic fields 365 days a year.

If you will sign and return the coupon, we will send you copies of THE CEMENTER as we issue them. News and views of the industry mailed, without cost, to all who are interested.

HALLIBURTON

OIL WELL CEMENTING CO.

Duncan, Oklahoma

Halliburton Oil Well Cementing Co.
Dept. OG, Duncan, Oklahoma.

Without cost or obligation, please place my name on the list to receive THE CEMENTER regularly as issued.

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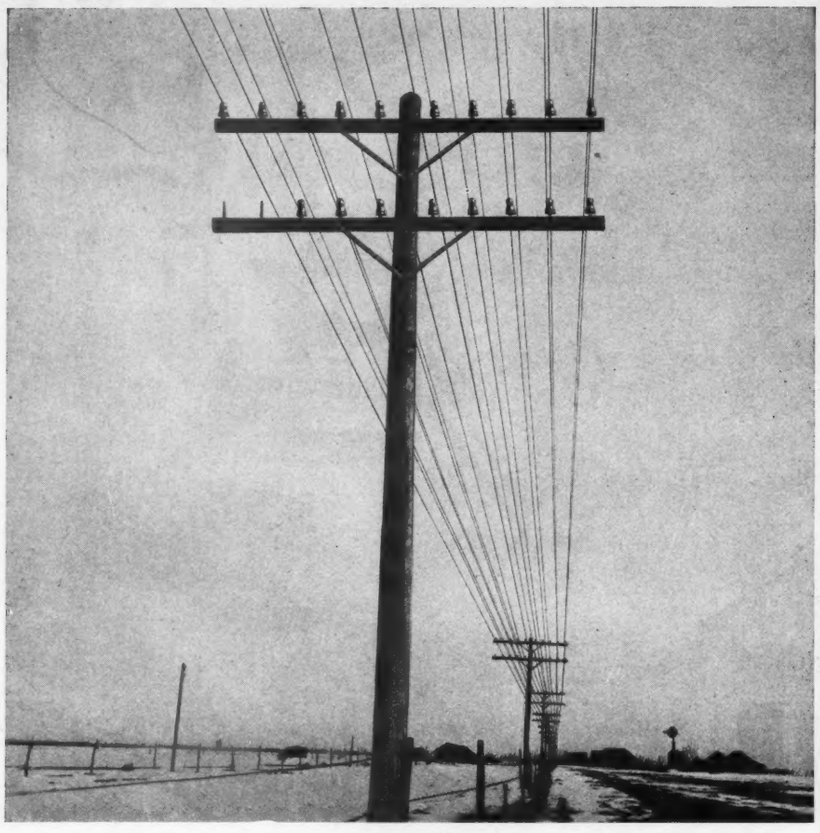


Page & Hill Butt-Treated Northern White Cedar poles in the Empire Company's lines near Pampas, Texas. This lead furnishes service in connection with operations of Cities Service Gas Company's Natural Gas service from Texas Panhandle to Kansas City.

P&H

"P & H Process"—the Original *Guaranteed Poles*

"P & H Process" Poles were the first Cedar poles having a guaranteed penetration of the preservative throughout the groundline area. They were first made available to pole users nearly a decade ago.

The "P & H Process" makes possible a length of life in the groundline section equivalent to the life of the pole above ground . . . . the one necessity to assure maximum life of the entire pole.

For your protection, we give a written guarantee with every carload of "P & H" Process" Poles. This guarantees a full sapwood penetration to a depth of one-half inch throughout the groundline area. For longest pole life and greater economy in line costs, specify "P & H Process" Poles.

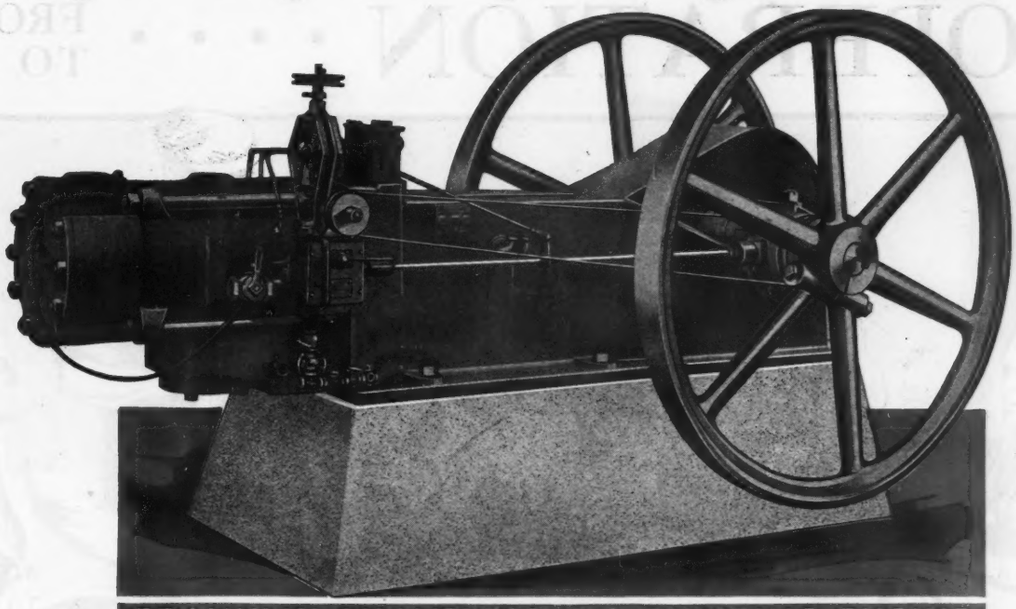
Fast Shipping Service on all your pole requirements.

"Still in the Lead"

PAGE AND HILL CO.

MINNEAPOLIS, MINN.

Kansas City, Mo., 455 Dwight Bldg. Chicago, Ill., 20 North Wacker Drive Bldg. New York, N. Y., 50 Church St.
Omaha, Neb., 711 Electric Bldg. Dayton, Ohio, 854 Reibold Bldg. Boston, Mass., 733 Public Service Bldg.



FRANKLIN VALVELESS O.G. PUMPING ENGINE

You Can lower Lifting Costs with this fine engine . . . . .

The Franklin Valveless Gas Pumping Engine is built without a single compromise as to materials, design, workmanship and quality of performance delivered.

A more simple engine is not built; it has strength but no excessive weight; its lubrication system has stood the acid test of delivering ample lubrication where needed without waste. Invariably where these engines are installed lifting costs show a sharp decline over a long period of years. Invest your power dollars where they will earn you dividends and don't forget that this engine, should your gas supply fail, is readily and quickly convertible to an oil engine of rare economy and high efficiency.

Franklin Valveless Engine Company

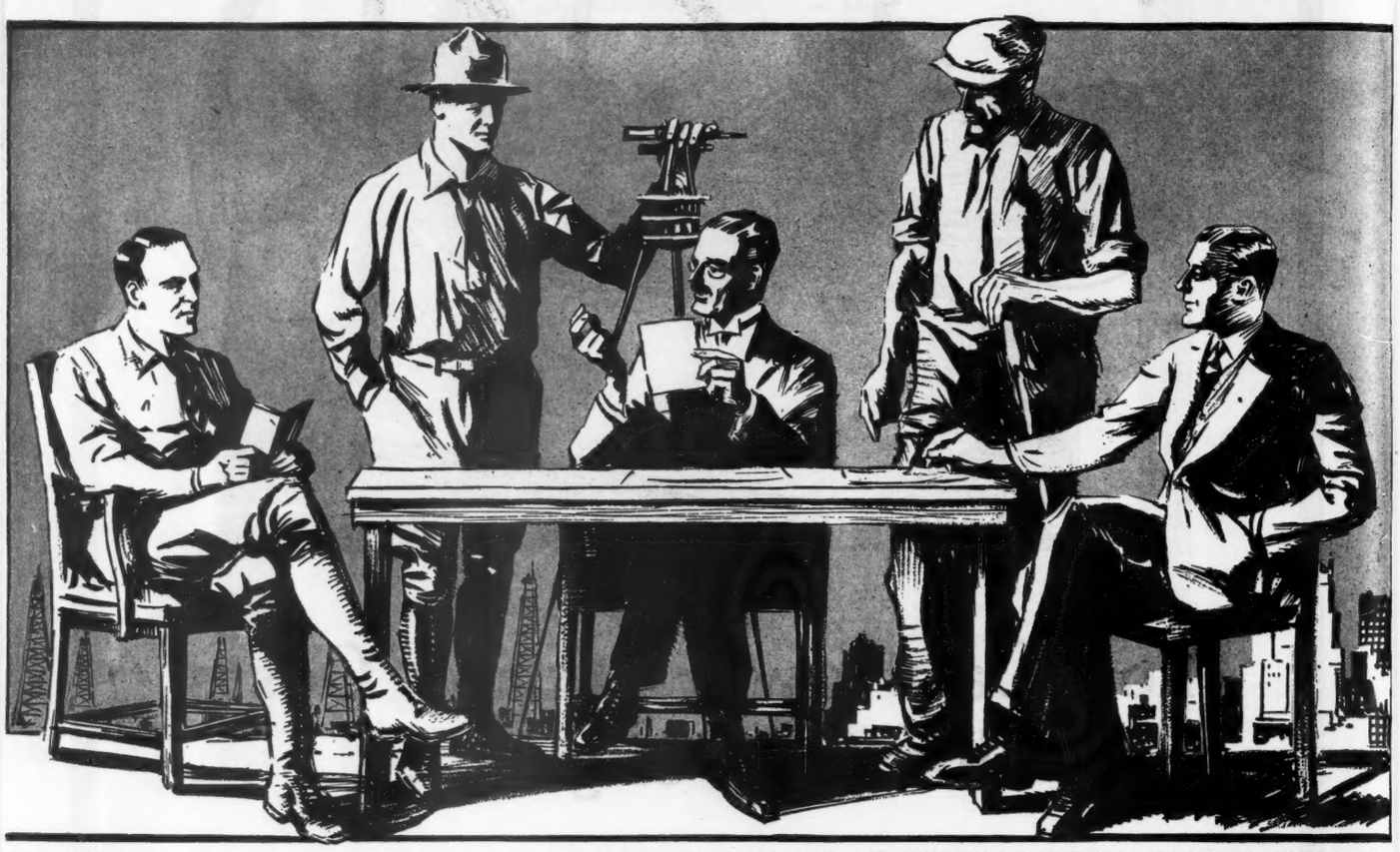
Franklin, Pennsylvania

Distributed by

OIL WELL SUPPLY COMPANY

ONE OF A SERIES OF ADVERTISEMENTS OF THE HOPE ENGINEERING COMPANY

COOPERATION . . . . FROM WELL TO METER



FIELD AND MARKET ANALYSIS · ENGINEERING COUNSEL AND DESIGN · ORGANIZATION AND FINANCE · CONSTRUCTION AND EQUIPMENT · MANAGEMENT AND OPERATION

FROM inception to completion, A Hope-Directed Natural Gas development proceeds surely and swiftly, with the precision of a highly specialized production machine.

Cooperation is the secret of this sureness and speed—cooperation between the Hope Engineering Company and its client—and cooperation between the Five Giants composing the Hope organization.

HOPE SERVICE

Field and Market Analysis
Engineering Counsel and Design
Organization and Finance
Construction and Equipment
Management and Operation

There cannot be this sureness and speed where there is not this cooperation.

And there cannot be this cooperation where responsibility for results is divided between several unrelated, uncoordinated interests.

In Hope Service alone can you secure the advantages and economies of cooperative effort under unified control and responsibility.

HOPE ENGINEERING CO

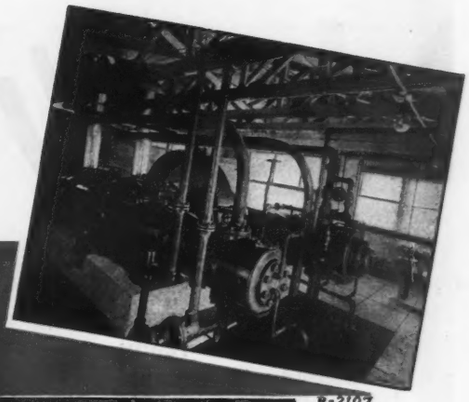
ENGINEERS AND CONTRACTORS IN PIPE LINE CONSTRUCTION

NEW YORK, N.Y. — Engineering-Construction Management — TULSA, OKLA.

MOUNT VERNON, OHIO, U.S.A.

AMERICAN INDUSTRY NEEDS MORE NATURAL GAS

At Signal Hill



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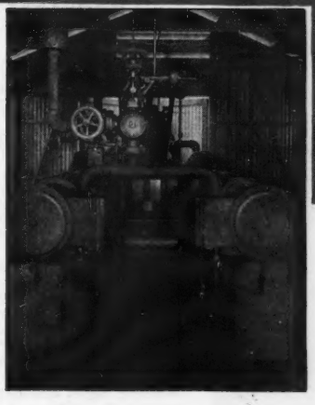
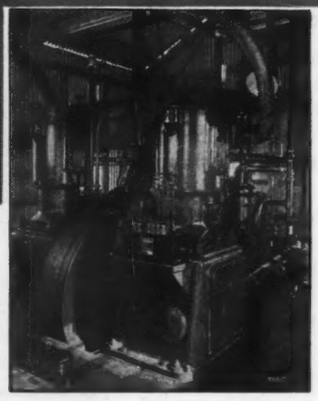


Two steam-driven units. Above, Type "XPV." Right, Type "XR."



Two gas-engine-driven units. Above, Type "XG." Left, Type "XOG."

A few types
from the most complete compressor line on the market

The illustrations show 4 types of Ingersoll-Rand Compressors operating in one field. Each is different, yet each fills a specific need and fits the requirements as determined by the particular operating conditions prevailing where it is used.

In considering a compressor from the Ingersoll-Rand line, you can rest assured that the type that best fits your operating conditions is available. I-R units are made for every commercial method of drive, and there are more than 1,000 types and sizes.

And, regardless of the drive you select, you will get the same dependable I-R compression cylinders that are known for their efficiency and economy wherever compressors are used.

INGERSOLL-RAND COMPANY » 11 Broadway « New York City

Branches or distributors in principal cities the world over

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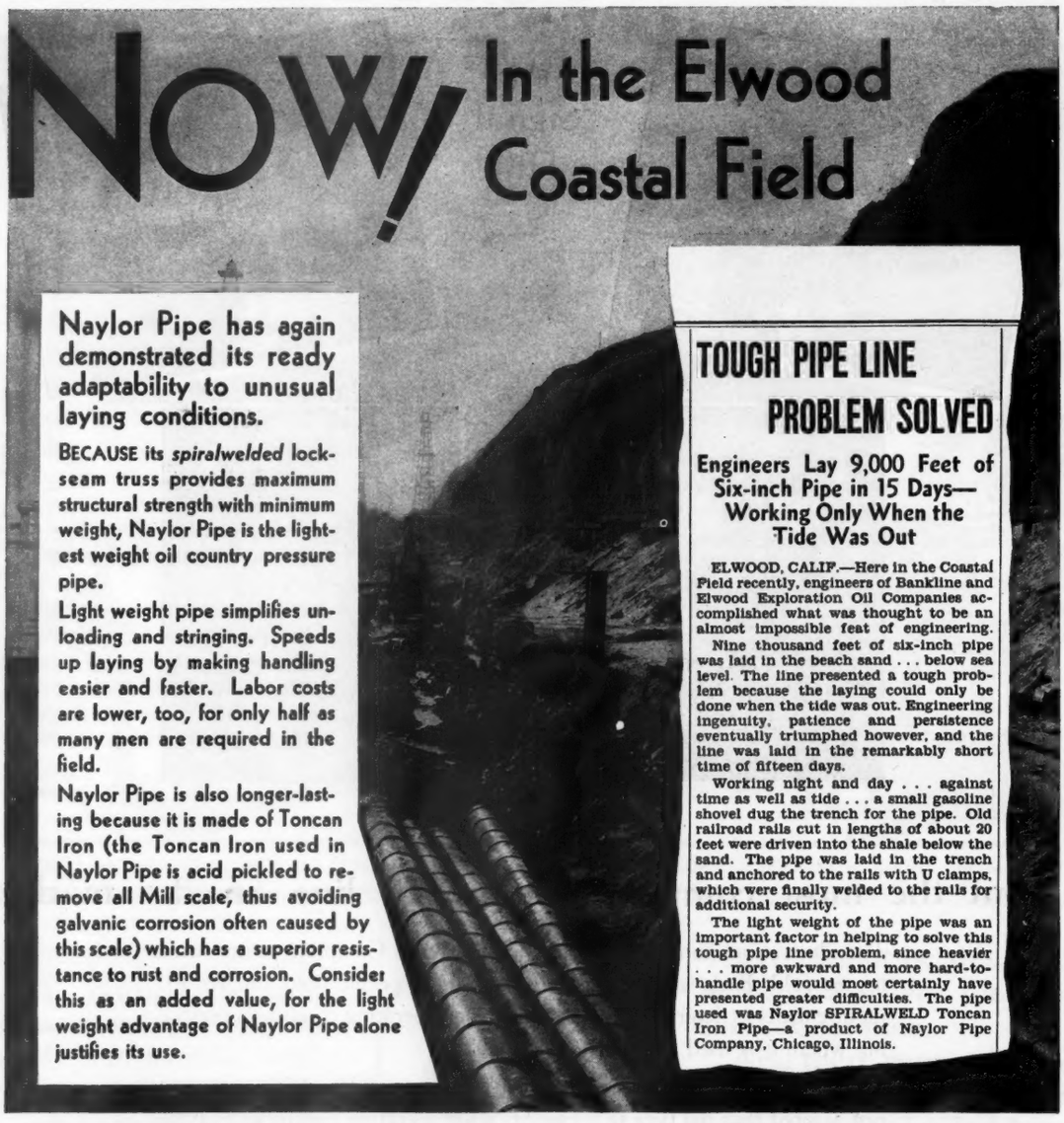
— Ingersoll-Rand —

NOW! In the Elwood Coastal Field



Naylor Pipe has again demonstrated its ready adaptability to unusual laying conditions.

BECAUSE its *spiralwelded* lock-seam truss provides maximum structural strength with minimum weight, Naylor Pipe is the lightest weight oil country pressure pipe.

Light weight pipe simplifies unloading and stringing. Speeds up laying by making handling easier and faster. Labor costs are lower, too, for only half as many men are required in the field.

Naylor Pipe is also longer-lasting because it is made of Toncan Iron (the Toncan Iron used in Naylor Pipe is acid pickled to remove all Mill scale, thus avoiding galvanic corrosion often caused by this scale) which has a superior resistance to rust and corrosion. Consider this as an added value, for the light weight advantage of Naylor Pipe alone justifies its use.

TOUGH PIPE LINE PROBLEM SOLVED

Engineers Lay 9,000 Feet of Six-inch Pipe in 15 Days—Working Only When the Tide Was Out

ELWOOD, CALIF.—Here in the Coastal Field recently, engineers of Bankline and Elwood Exploration Oil Companies accomplished what was thought to be an almost impossible feat of engineering.

Nine thousand feet of six-inch pipe was laid in the beach sand . . . below sea level. The line presented a tough problem because the laying could only be done when the tide was out. Engineering ingenuity, patience and persistence eventually triumphed however, and the line was laid in the remarkably short time of fifteen days.

Working night and day . . . against time as well as tide . . . a small gasoline shovel dug the trench for the pipe. Old railroad rails cut in lengths of about 20 feet were driven into the shale below the sand. The pipe was laid in the trench and anchored to the rails with U clamps, which were finally welded to the rails for additional security.

The light weight of the pipe was an important factor in helping to solve this tough pipe line problem, since heavier . . . more awkward and more hard-to-handle pipe would most certainly have presented greater difficulties. The pipe used was Naylor SPIRALWELD Toncan Iron Pipe—a product of Naylor Pipe Company, Chicago, Illinois.

NAYLOR PIPE COMPANY, Main Office & Plant, 1230 E. 92nd St., CHICAGO

SALES OFFICES

3116 Chrysler Bldg. New York ◆ Witherspoon Bldg. Philadelphia ◆ 507 Philtower Bldg. Tulsa ◆ 2301 Commerce St. Houston ◆ 402 Petroleum Bldg. Ft. Worth

MONTREAL, CANADA: Mechanical Equipment Company, 660 St. Catherine St., West

TONCAN COPPER

Naylor Pipe

Maximum Structural Strength Mo-lyb-den-um With Minimum Weight

IRON

Where corrosion is not a problem, Naylor Pipe can be furnished in steel.

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40'0". Ends made to wrought pipe standards for all types of coupling.

Toncan Copper Molybdenum Iron possesses a superior corrosion resistance, making it the favored pipe material.

Vapor Phase Refining

is operating successfully in

Direct Connection with

Cross, Dubbs, Jenkins, and other

Cracking Units—

ELIMINATING ACID TREATING
AND RERUNNING

THE GRAY PROCESSES CORPORATION
961-975 FRELINGHUYSEN AVENUE
NEWARK, NEW JERSEY

FULLY PATENTED

Bettis Engineering Service Costs You Nothing

Bettis Engineers are in the field constantly, studying drill pipe abrasion problems.

They have discovered several new applications of Bettis Protectors.

They have developed ways and means of saving time and money for every company that is carrying on rotary drilling operations.

You may be able to profit by their experience and advice. Particularly so if you have experienced abrasion troubles, excessive fishing jobs and extra high drilling costs.

Bettis Engineers will study the actual condition of your wells and show you how to save the initial cost of a Bettis installation many times.

As part of the service we are rendering to the industry, fresh stocks of Bettis Protectors are carried at strategic locations in the principal fields so that you need never experience costly delays in obtaining replacements.

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Insurance Exchange Building
Los Angeles

Texas and Gulf Coast Distributors:
BETTIS SALES CO., 917 Merchants & Mfrs. Bldg., Houston

Oklahoma Distributors:
BAILEY & BECKER COMPANY, 410 Thompson Bldg., Tulsa

New York Office: 39 Cortlandt St.

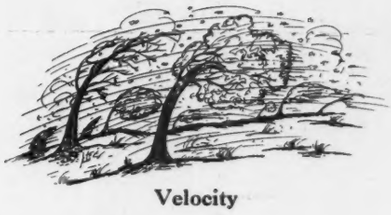
Carried in stock at Los Angeles, Ventura, Kettleman Hills, Bakersfield, Coalinga and Long Beach, California; Tulsa and Oklahoma City, Oklahoma; Houston, Texas; Hobbs, N. M.; Calgary, Alberta, Canada; New York City.

"Best Bet Yet"

Ask for Catalog

Bettis Protectors

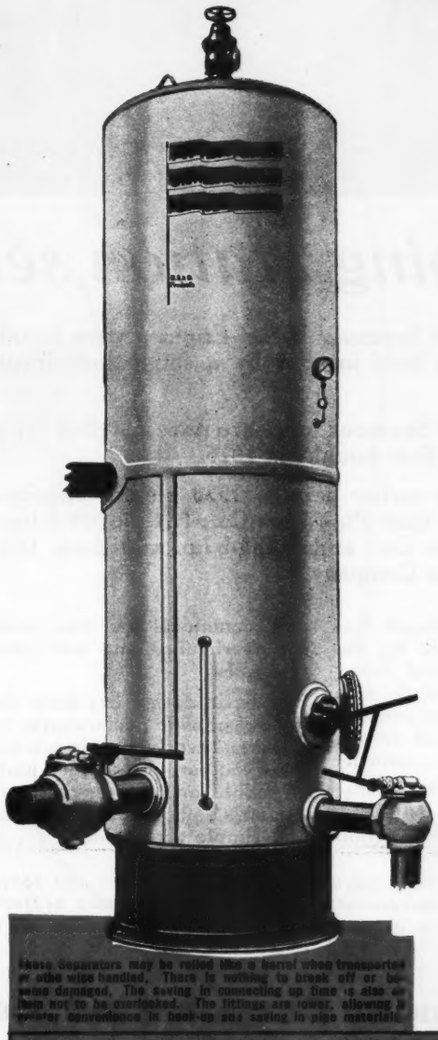
Centrifugal Force



Velocity

Gravity

These Natural Forces Used to Full Advantage



These Separators may be rolled like a barrel when transported or otherwise handled. There is nothing to break off or become damaged. The saving in connecting up time is also an item not to be overlooked. The fittings are lower, allowing greater convenience in hook-up and saving in pipe materials.

In the *Improved American* Oil and Gas Separator

Equipped with B. S. & B. Spray Condenser

¶The operation of the Improved AMERICAN Oil and Gas Separator is based on specific laws of Nature, and uses Her forces to the fullest advantage. All parts of the Separator are constructed in accordance with these laws.

¶The pressure from the well is controlled and the flow comes in through an Inside Tangential Inlet, which makes it possible to secure the greatest centrifugal force without loss.

¶As the oil drops by gravity to the bottom of the Separator, its flow is perfectly and automatically controlled by the oversize Inside Float. The gas velocity is utilized in the B. S. & B. Spray Condenser to completely strip the remaining oil from the gas, insuring 100% dry gas.

¶These unusual features have revolutionized oil and gas separation and are forcing into discard old and inefficient methods. Salvaging all the oil from the gas will soon pay for the Improved AMERICAN.

¶Each AMERICAN is thoroughly tested before delivery.

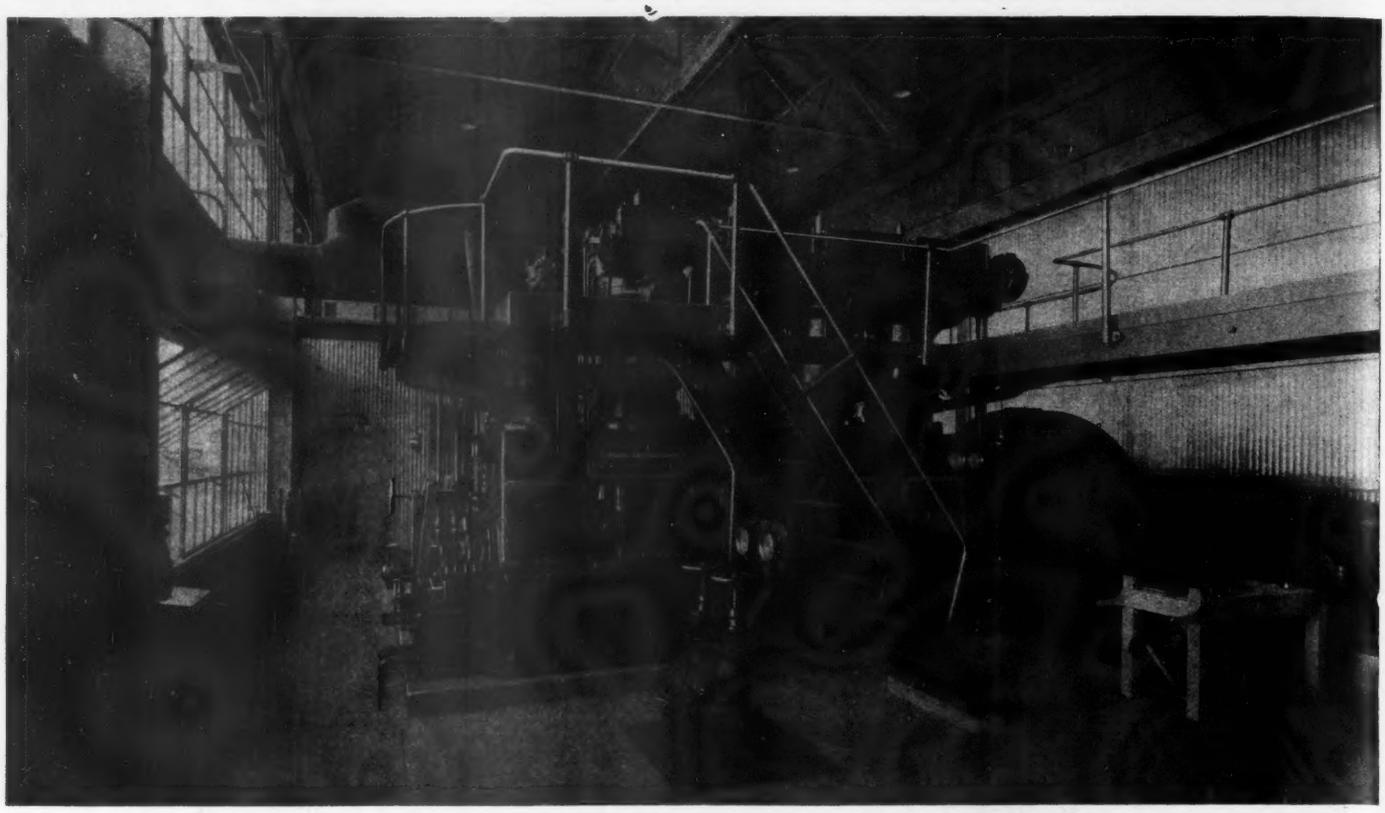
May we send a representative to further explain and discuss in detail these and the many other advantages of the Improved AMERICAN Oil and Gas Separator? Please address Dept. BA-5.

"See American First"

American Tank Co.

A SUBSIDIARY OF
BLACK, SIVALLS, & BRYSON, Inc.
BARTLESVILLE, OKLAHOMA

OKLAHOMA CITY, OKLAHOMA



Easily the leaders in pumping station service

Thirty-one McIntosh & Seymour Diesel Engines were installed in the Mid-Continent field in 1929 by a single prominent pipe line company.

Fifty-nine McIntosh & Seymour units are now installed for a pipe line company that first bought in 1916.

Orders received in the earlier part of 1930 include twenty-eight 300-b.hp. units for Gulf Pipe Line Co.; fifteen 500-b.hp. units for Ajax Pipe Line Co.; and a 480-b.hp. and three 600-b.hp. units for the Texas Company.

What a leading authority on pipe-line pumping says about Diesel power.

"When the conversion of fuel into power is the consideration, the Diesel engine is more efficient than any other known type of power generator. Aside from its advantage of fuel economy, the Diesel engine is always to be preferred, if the available supply of water is limited or of bad quality; if smoke is a serious objection; if conditions exist where the engine must be started up and put on load quickly. The Diesel engine is especially preferred on pipe line systems, first on account of its fuel economy and second, that the crude oil in the lines is always available for fuel, and it goes without saying that on larger installations good fuel oil is always available and even at a less cost, and it is also a fact that where crude oil is used there is (so to speak, when the Diesel engine is compared with a steam unit) more usable oil left available to be passed through the lines and refined. Actual records on a large pipe line system show that the fuel consumption on a Diesel engine, compared with a triple expansion steam pumping unit, is in the ratio of 1 to 3½, and in many cases 1 to 4. This means on the same pipe line system (in the case where crude oil is used for fuel) that there is a saving of approximately 150,000 to 175,000 bbl. per day capacity."— *R. G. Lewis, of Prairie Pipe Line Company, in Aug. 29, 1929, issue of Oil and Gas Journal.*

McINTOSH & SEYMOUR Diesel Engines are largely responsible for the steady transition from steam to Diesel power in pipe-line pumping stations, and through sustained operating economy, convenience, dependability and long life, have well earned the distinction of being the most trustworthy for the above important installations.

These units come through the long heavy pumping runs year-in year-out with continuous economical fuel rate, with little idleness for overhauling and with small expense for renewals.

The basic design has been developed in the light of notable performance records, the material and workmanship are never cheapened, the fixed parts are rugged and virtually indestructible, and the moving parts and wearing surfaces embody every essential for long life and simple replacement.

McIntosh & Seymour Engines are available in types, sizes and speeds for every pumping station requirement. Let us submit definite performance figures together with references to notable achievements of early and recent installations.

McIntosh & Seymour Corporation, Auburn, N. Y.

Division of American Locomotive Company

New York City	Kansas City, Mo.	Jacksonville, Fla.	Houston, Texas	San Francisco, Calif.
30 Church St.	1016 Baltimore Ave.	412 Bisbee Bldg.	2703 Esperson Bldg.	514 Matson Bldg.

McINTOSH & SEYMOUR DIESEL ENGINES

Reamer Up-keep Stays Down When a 4-Way ALCO Is on Your Drill String

ALCO *Simplified* *Rotary* REAMER

Note the locking shoulders on this ALCO REAMER SHANK—they assure positive locking of the reamer (shown below)
ALCO 4-BLADE REAMER made of one piece high grade steel
For straight, true hole use ALCO BITS and ALCO REAMERS
This is the Complete Assembly

The experiences of successful drillers with Alco Rotary Reamers, in nearly all fields, provide ample evidence of the higher efficiency of this improved tool.

Alco Rotary Reamers can usually be run a number of times without rebuilding, thus effecting material savings not only in shop costs but in time as well. They can be run at as high speed as is practicable with the bit in use and the formations encountered as all four blades are diamond-sub set and (unless otherwise specified) faced with Stellite.

The positive cutting action of Alco Rotary Reamer is identical with that of the Alco Hard Formation Drilling Bit. The off-set blade construction gives maximum cutting results and at the same time is of material assistance in keeping the hole straight and true.

When used in the combination illustrated at the left it is impossible for the reamer to come loose as the tighter the bit becomes the more securely the lock-slots on the reamer engage the lugs on the shank.

Made to fit any type drill-pipe and to ream any size hole accurately to gauge from 5¼ to 19 inches. Immediate service from any Alco Branch.

Alco OIL TOOL CO. Inc.

P. O. Box "A", Compton, California

Bakersfield • • Maricopa • • Ventura

Houston TEXAS • Oklahoma City OKLAHOMA

New Mexico Drillers!

EXTRA!

For your special convenience we have recently opened a new branch at

NEW HOBBS, N. MEX.

All orders placed through this branch will receive the same careful and immediate attention as those you have been sending through our older established branches.

Makers also of "Alco" 10,000 lb. Forged Steel Fittings—3 times more strength than any known gas or oil pressure!

FISHING TOOLS
DRILLING TOOLS

AMERICAN IRON & MACHINE WORKS CO. · OKLAHOMA CITY ·

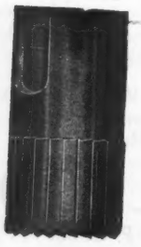
AMERICAN MILLING SHOES

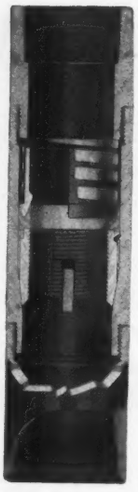
Interchangeable with Standard Guide

TYPE "D"

TYPE "E"

TYPE "F"





American Releasing and Circulating Overshot

for Perfect Performance

When fishing tools are needed you can depend upon the satisfactory performance of the American Releasing and Circulating Overshot.

It will catch drill pipe, drill pipe coupling or tool joint and will release from any point.

The slips which are keyed in the bowl have left hand threads and the fish is released by rotating to the right.

When the fish is caught the rubber packer makes a tight joint assuring circulation.

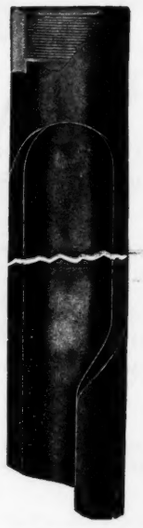
The American Releasing and Circulating Overshot is a profitable tool because it saves time and worry.

ONE TOOL THAT DOES THE WORK OF THREE

You need not longer buy two or three fishing tools because all the features are combined in the American.

The wall Hook (right) may be used in place of standard guide. It will save many a run in and out. Made in eight, fifteen and twenty four foot lengths.

Milling shoes (Type "D" "E" and "F" Left) are also interchangeable with standard guide.



Wall Hook

AMERICAN IRON and MACHINE WORKS CO.

Manufacturers of Oil Field Equipment
OKLAHOMA CITY, OKLAHOMA

American OIL FIELD EQUIPMENT
Sold by Leading Supply Companies

American Releasing and Circulating Overshots
American Rock Bit Wrenches
American Milling Shoes
American Flexible Coupling for Rock Bit Lubricators
American Steel Tool Houses
American Steel Tool Boxes
American Forged Steel Wall Hooks
American Rock Bit Breakout Blocks
American Paraffin Bits
American Forged Steel Drill Collars
American Female Die Nipples
American Releasing and Circulating Spears
American Tapered Taps
American Forged Steel Subs
American Rotary Shoes
American Cone Fishing Baskets
American Steam Lubricators
American Side Tracking Mills
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American Steel Engine Foundations
American Automatic Cat Head
American Automatic Cat Head Control Levers
American Rotary Milling Tools
American Myracle Sucker Rod Sockets
American Surface Bit Blades for Rock Bits
American Drill Pipe Float Joints
American Pump Manifold Check Valves
American Eccentric Releasing Overshot
American Casing Suspension and Blowout Preventer
American Lead Plug
American Rock Bit Cone Fishing Sockets
American Steel Whipstocks
American Inside Pipe Cutter for Drill Pipe or Casing
American Adjustable Steel Rig Braces
American Fish Tail Bits

Reid

THE SONG OF THE ENGINE

IT started with a discussion of that "Song of the Engine" article on the back page of the April I C P. We all agreed that it rings true, and Dan supplied a tale or two.

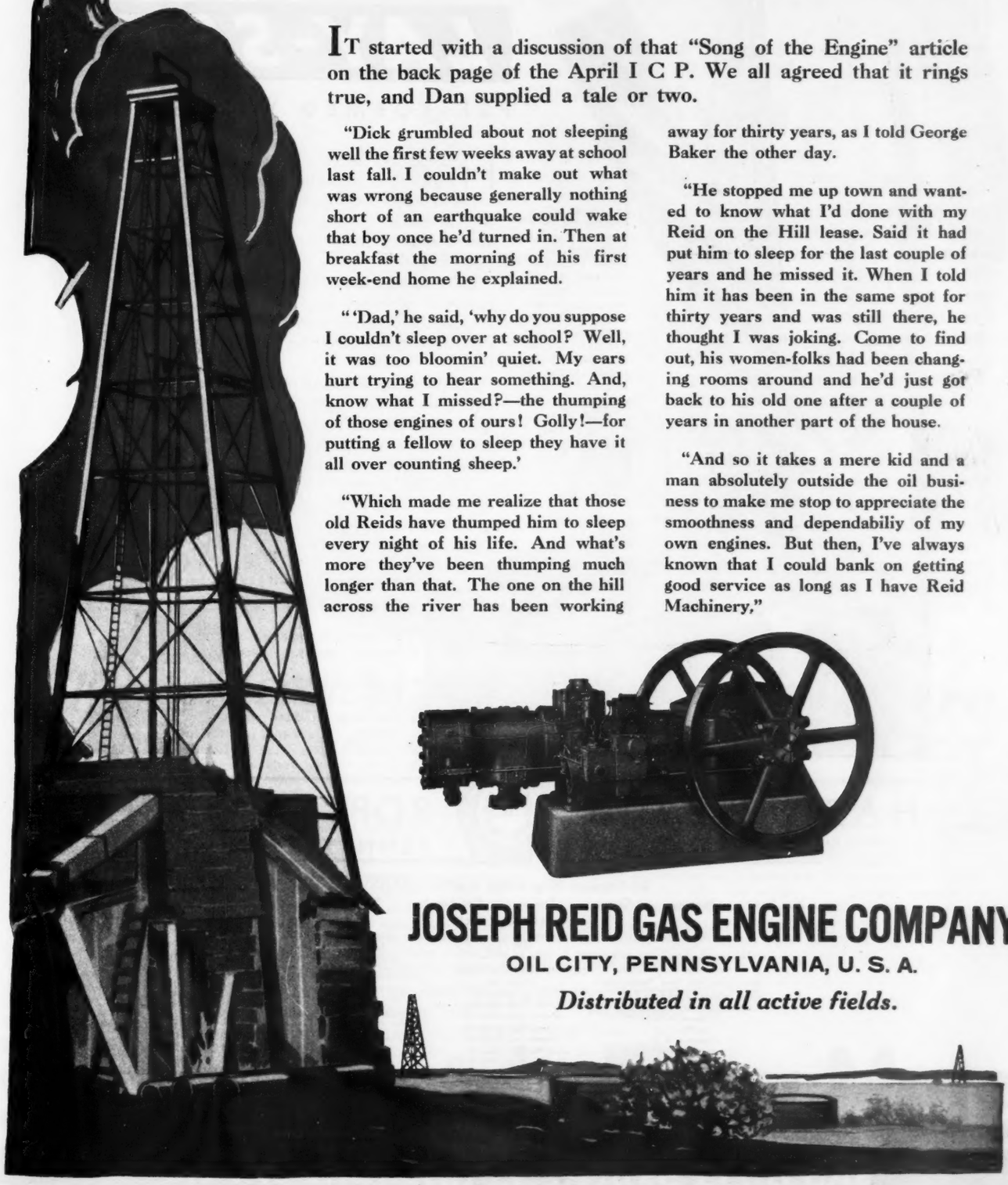
"Dick grumbled about not sleeping well the first few weeks away at school last fall. I couldn't make out what was wrong because generally nothing short of an earthquake could wake that boy once he'd turned in. Then at breakfast the morning of his first week-end home he explained.

"'Dad,' he said, 'why do you suppose I couldn't sleep over at school? Well, it was too bloomin' quiet. My ears hurt trying to hear something. And, know what I missed?—the thumping of those engines of ours! Golly!—for putting a fellow to sleep they have it all over counting sheep.'

"Which made me realize that those old Reids have thumped him to sleep every night of his life. And what's more they've been thumping much longer than that. The one on the hill across the river has been working away for thirty years, as I told George Baker the other day.

"He stopped me up town and wanted to know what I'd done with my Reid on the Hill lease. Said it had put him to sleep for the last couple of years and he missed it. When I told him it has been in the same spot for thirty years and was still there, he thought I was joking. Come to find out, his women-folks had been changing rooms around and he'd just got back to his old one after a couple of years in another part of the house.

"And so it takes a mere kid and a man absolutely outside the oil business to make me stop to appreciate the smoothness and dependabiliy of my own engines. But then, I've always known that I could bank on getting good service as long as I have Reid Machinery,"



JOSEPH REID GAS ENGINE COMPANY

OIL CITY, PENNSYLVANIA, U. S. A.

Distributed in all active fields.

A NEW NAME

for a familiar HAZARD Rope

This is an actual photograph of a piece of Lay-Set Preformed Wire Rope. Note that the end is not seized. Ordinary wire rope, when cut, unravels; the strands and wires straighten out as the confined internal stress is liberated.

LAY-SET

PRE-FORMED WIRE ROPE

HAZARD announces a significant new name in wire rope—"Lay-Set"—(formerly Flex-Set).

This new name more readily associates this familiar rope with its preformed construction—for preforming "sets" each wire and strand to the exact shape it assumes in the finished rope.

Oil companies and drilling contractors everywhere are turning to preformed rope because preforming entirely eliminates the internal stresses inherent in ordinary wire rope, thereby removing the cause of most early rope failures.

Everything that the name HAZARD has meant to wire rope users for over eighty years—advanced design, first quality materials and craftsmanship, and long dependable service—is exemplified in this familiar rope with the new name, "LAY-SET", preformed by Hazard.

"LAY-SET" Preformed Wire Rope is carried in stock by the branches and dealers listed. Specify it for your next rope requirement.

Outstanding advantages of LAY-SET

1. No internal stresses.
2. Handles readily. Not "cranky".
3. Installed in less time.
4. Equal load on all strands.
5. Less wear on drums and sheaves.
6. LONGER LIFE.

HAZARD WIRE ROPE COMPANY
WILKES-BARRE PENNSYLVANIA

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UNION PIPE & SUPPLY CO.
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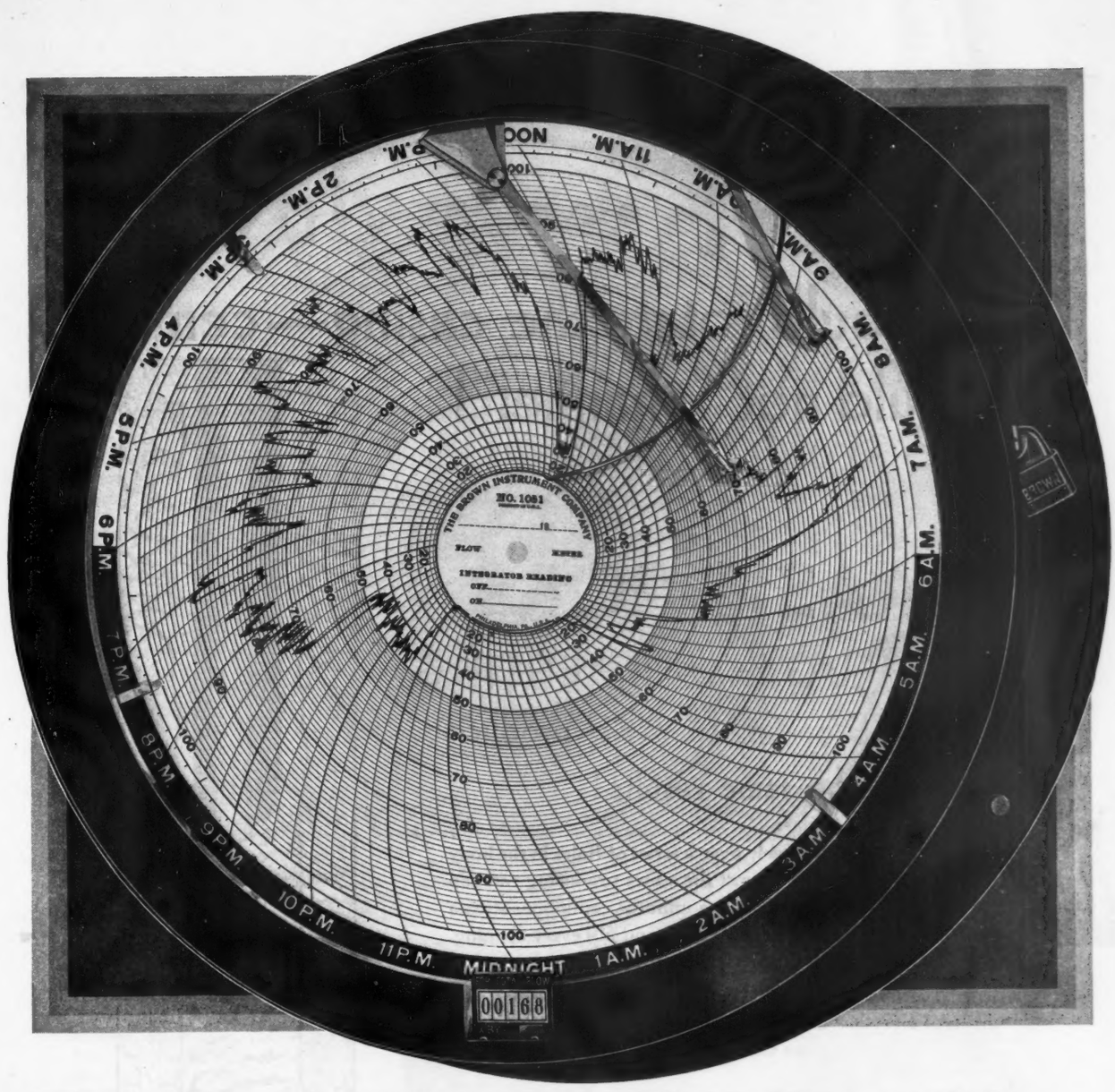


The FLOW METER *That Does More*

1. Here is a flow meter that will remain accurate even though the line voltage should vary 30 per cent up or down. This indifference to voltage fluctuations is obtained without any complications—with no transformers—no compensators. It is an inherent characteristic of the inductance bridge principle.
2. Extremely accurate because even the smallest movements of the manometer float are faithfully transmitted, owing to the elimination of "steps" by the inductance bridge principle.
3. By simply counting the marks recorded on the chart rim you can read the volume of flow that has taken place during any period; a feature made possible by the automatic recording planimeter. No integrator logging; no hand planimetering.
4. You need never be troubled by finding the record jammed along the edge of the chart; the range can easily be changed to bring the record back near the chart center where it has plenty of room; an advantage accomplished by simply changing the "range tube."
5. A thoroughly compact job, easy to install and convenient to use, because the integrator is built into the recorder and has a plain five-figure dial which anyone can read at a glance.
6. The accuracy of this meter can never be impaired by loss of mercury; the mercury cannot be blown out of the manometer pressure chamber by even the most violent flow changes; because the manometer has an automatic mercury seal.

These Features Are of Vital Importance in Making Possible the Extreme Accuracy, Dependability and Completeness of the Service Rendered by Brown Electric Flow Meters. Check All the Flow Meters in the Market—You Will Find No Other Combining These Advantages or Their Equivalent.

Ask for Information—Suggestions—Engineering Aid.

THE BROWN INSTRUMENT COMPANY
4488 Wayne Ave. Philadelphia, Pa.
Branches in 20 principal cities.

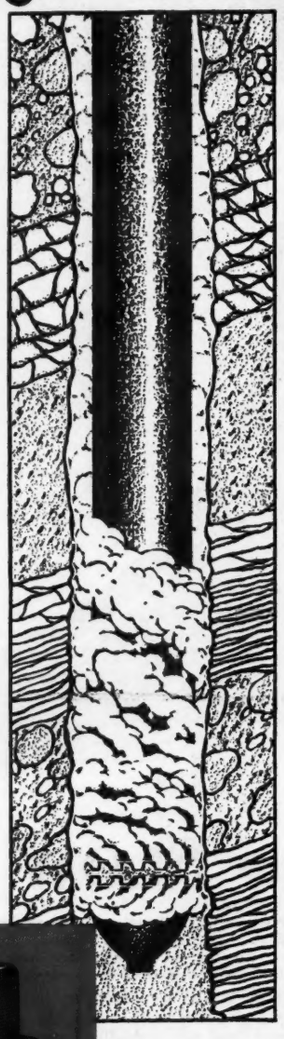
To Measure is to Economize

Brown Electric Flow Meter

on the Inductance Bridge Principle

IF...

you could rotate the casing—cement would not "channel"!



BAASH-ROSS

CENTRIFUGAL CEMENTING GUIDES or COLLARS produce the same results!

A ROTOR turning freely over a series of holes in the body ...cement forced against the vanes producing rotation ...result...cement whirled out in a uniform, continuous stream that washes the walls of the hole clean and fills every opening.

Boulders and obstructions can't stop this continuous, uniform flow...no channels can be left...out of many test jobs with this tool *every one secured a complete shut off.*... Bulletin 81 gives more particulars!

BAASH-ROSS TOOL COMPANY

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BAASH-ROSS TOOL COMPANY
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Please send me—no charge or obligation—Bulletin 81 describing the Baash-Ross Centrifugal Cementing Guides and Collars.

*Name*_____

*Company*_____

*Address*_____

Regular Pattern Baash-Ross Centrifugal Guide—here illustrated—and Cementing Collar distribute the cement horizontally. The Special Pattern distributes at a 45-degree angle toward the bottom of the hole. All three insure every cement job against "channeling"

The Only *motor-winding* fibre *that* cannot burn *or Carbonize* [ASBESTOS]

HAVE YOU ever held a piece of Asbestos rock in your hand and noted its silky fibres?

Each tiny fibre, finer than the strand of a spider's web, will withstand any heat and will not carbonize. It can be heated "*white-hot*" and will not melt, but will revert to its original silky state.

This is the material that protects the windings in U. S. MOTORS.

Of course, motors are not subjected to such INTENSE heat in ordinary operation, but the higher the temperature the more rapidly carbonization will take place.

Any motor winding in which materials used for insulation include varnished cloth, oiled linen, press board, fish board or varnish insulation, is subject to carbonization because not one of these materials is *fire-proof*. Even the best of such materials will deteriorate under the temperatures at which motors are often called upon to operate.

ASBESTOS IS A FIBROUS ROCK, OLDER THAN HISTORY. IT HAS NEVER CHANGED IN CHARACTER OR FORMATION.

Asbestos-Protected U. S. Motors

Asbestos, the material that cannot carbonize, is used to protect the windings of U. S. MOTORS. It is specially treated, processed and formed for application to the stator slots, wires and coils.

Assisting in the work of insulating, another heat-resisting product—ASBESTOSITE—has been developed by the U. S. organization. This impregnating compound, used for the purpose of isolating the individual wires in the windings, is produced by reducing Asbestos fibre rock to a very fine powder. This Asbestos base is held in colloidal solution with highly volatile diluents which are driven off after the compound permeates the windings.

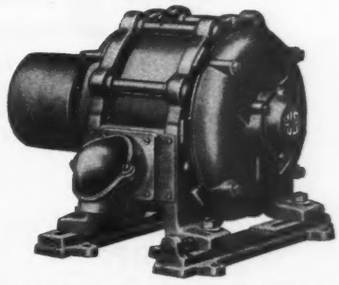
Through baking and particular curing means, the Asbestosite is hardened and forms a *solid*, intimately attached to and isolating every turn of wire in the windings.

This is accomplished by inductively vibrating the coils of windings while immersed,—a patented process controlled exclusively by U. S. MOTORS.

Asbestos protection is but one of the exclusive *U. S. Motor* developments.

To mention another,—the *U. S. AutoStart* principle,—which ushered in the automatic push-button era for large squirrel-cage motors. Probably no development in the past twenty years was so far-reaching in simplifying motor operation. The U. S. Auto-Start Motor provides automatic self-starting without complication.

U. S. MOTORS resist carbonization successfully. Motor life is greatly prolonged. The pamphlets, "Asbestos Protection" and "U. S. AutoStart Motors," describes exclusive features embodied in these motors. A copy may be obtained by addressing any office below.



¼ H. P. to 125 H. P. RATINGS
Horizontal and vertical motors of many types for modern industry.

U. S. MOTORS
ASBESTOS PROTECTED

U. S. ELECTRICAL MFG. CO.
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DE LA VERGNE DIESELS

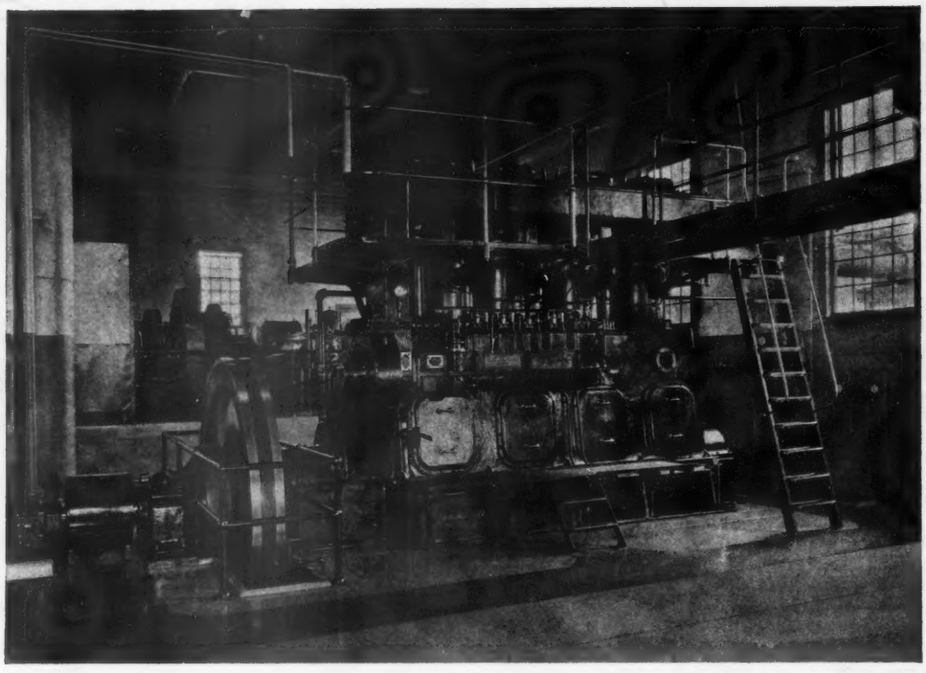

Photo above shows in the foreground a 400 B.H.P. De La Vergne Diesel engine installed in an oil pipe line pumping station in the Southwest. Our *4 cycle solid injection* Diesels are conservatively rated for uninterrupted service—so vital in oil pipe line pumping work.

We quote from the February, 1930, issue of BRITISH MOTOR-SHIP.

> *"At the present time 60 per cent of the four-stroke engines on order are to be built as airless-injection, whereas two years ago the percentage was under five."*

De La Vergne has been building 4 cycle solid injection Diesels for the past fourteen years.

I. P. Morris & De La Vergne, Inc.

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Branch Offices:

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De La Vergne has been building 4 Cycle Solid Injection Engines since 1895

A Typical 6,000-Barrel McKee Designed Refinery

Complete From Plan to Product

PLACING the construction of a complete Refinery with one Engineering and Contracting organization insures undivided responsibility from the design to the delivery of the plant ready for operation. Coordinated plans prepared by experts and embodying extensive actual experience reduce the capital investment and the time of construction to the minimum.

Arthur G. McKee & Company offers a broad and comprehensive service to the Petroleum Industry, from the design of individual process equipment to the design and erection of complete refineries, of any capacity, in the United States or any foreign country.

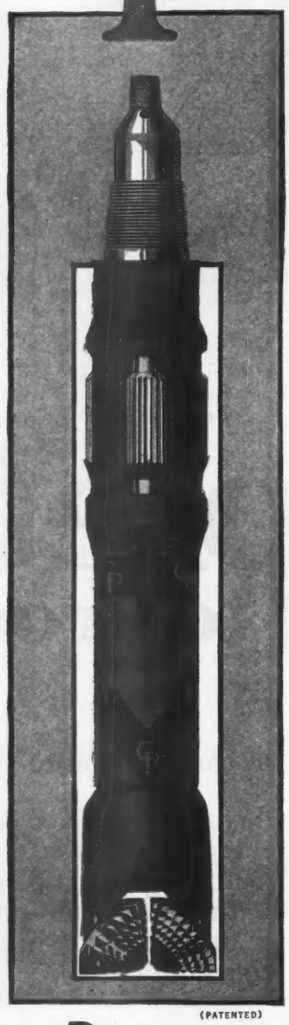
Arthur G. McKee & Company

Engineers and Contractors

2422 Euclid Avenue, Cleveland, Ohio

London, England, Bush House, Aldwych, W.C. 2

With the NEW CP "Tucone" ROCK BIT



(PATENTED)

9 POINTS OF SUPERIORITY

1. SAFETY—Extra large drop-forged spindle bearings. No cone bushings. One-piece bit head. One-piece reamer body. FISHING ELIMINATED
2. CIRCULATION—Fluid stream jets directly on bottom of hole. No side-wall hydraulicking. STRAIGHT HOLE
3. CLEARANCE—Over 34% of hole area is clear. "Balling up" eliminated. STRAIGHT HOLE
4. CONES AND SPINDLE BEARINGS—Cones run on extra large replaceable drop-forged spindle bearings. Stronger and thicker cone wall section due to absence of bushing. GREATER STRENGTH
5. REAMERS—Three units, properly spaced and located for accurate reaming. New type reamer bearing eliminates wear on reamer body. KEEPS GAUGE — ALWAYS!
6. ONE-PIECE BODIES—Both bit and reamer bodies are solid manganese steel. GREATER STRENGTH
7. REPLACEMENTS—Cone-and-bearing units and reamers easily and quickly changed. TIME SAVED
8. LOW MAINTENANCE—Body repairs eliminated. No wear on bit head or reamer body. MONEY SAVED
9. CONE SERVICE—New CP "Red Head" cutting cones can be refitted on your used bearings (only at authorized CP Service Stations) and guaranteed by CP to be as good as if a new bearing were used—at a great saving to you! ECONOMY

THREE REAMER CUTTERS

Properly spaced and located for accurate reaming. New type reamer bearing eliminates wear on body.

KEEPS GAUGE—ALWAYS!

Three separate reamer cutters are placed at the proper distance for best alignment and efficient reaming. The reamer cutters rotate on a bearing held in the reamer body by a bearing pin. Thus, any wear caused by the reaming action falls on the reamer cutters and the bearings—there is no wear on the reamer body itself, therefore, NO LOSS OF GAUGE!

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: Chicago Pneumatic Bldg., 6 East 44th St., New York

OIL TOOL DIVISION OFFICES:

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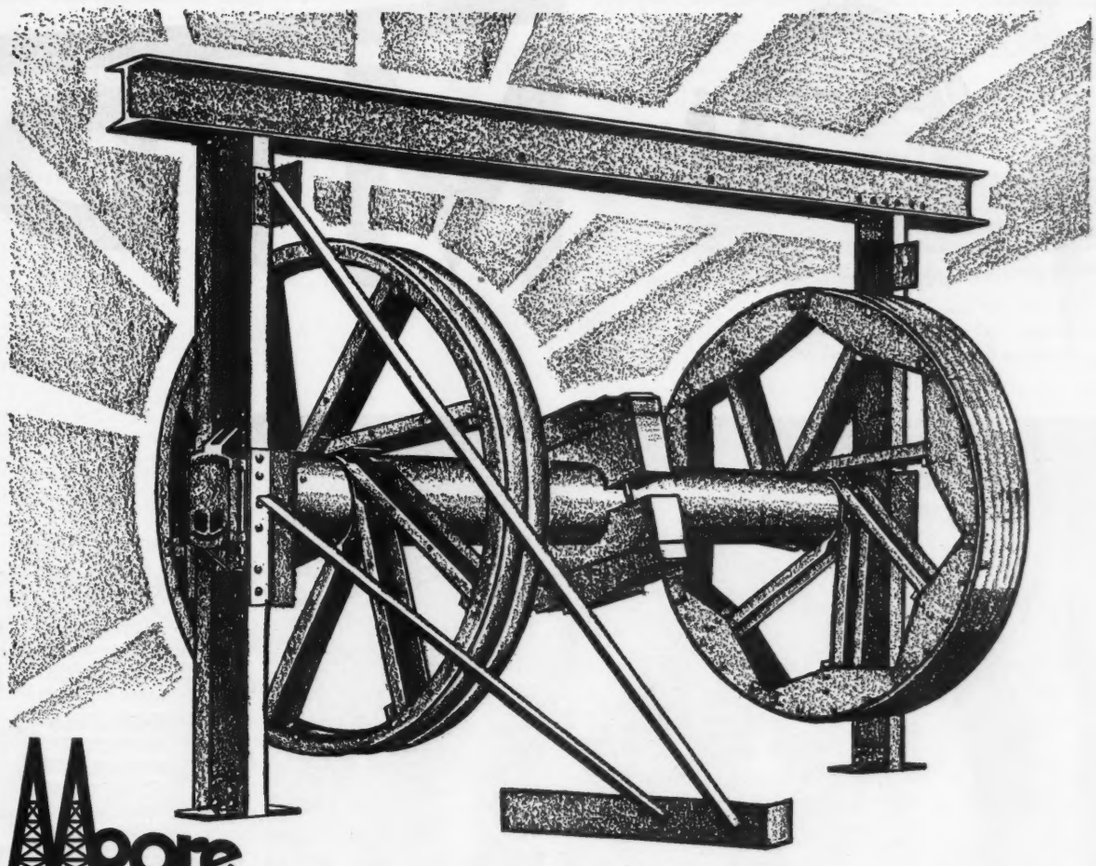
KEEPS GAUGE ...ALWAYS! OT-15

That the use of CP "Tucone" Rock Bits will unquestionably result in lower drilling costs, we are ready and willing to prove in any way YOU say! An inquiry to any of the above addresses will receive immediate attention.



Moore

BULL & CALF WHEEL POSTS

AS GOOD AS THE CHAMPION DERRICK

The self-aligning bearings of these steel posts offer important advantages. Because of irregularities in a pipe shaft or deflection in a shaft under heavy load, the wheel trunnion often does not revolve on a true axis. In Moore posts, the bearing is free to align itself with the wheel trunnion, permitting the wheel to turn freely. This arrangement, together with the effective means of lubrication provided, give long life to the bearing surface. The babbitt lining lasts indefinitely. Bearings can be furnished with bronze bushings for extra heavy work.

Clip angles on the post bottoms attach either to wooden sills or to Moore steel sills. Bull Wheel Posts are made in light and heavy types; Calf Wheel Posts in the heavy type only.

Moore

ALL STEEL RIG EQUIPMENT

LEE C. MOORE AND COMPANY, INC.

PITTSBURGH Established 1907 TULSA

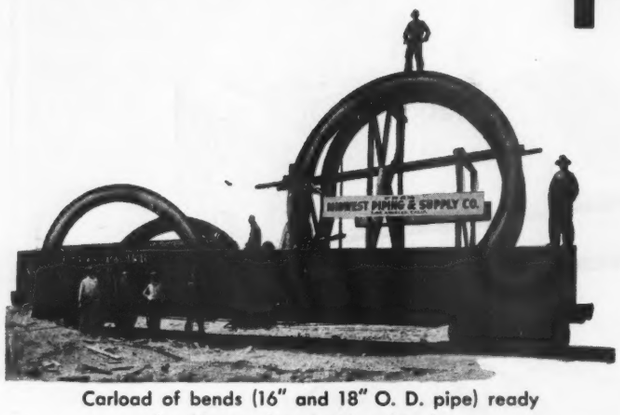
New York Offices: Oilfield Equipment Company, 30 Church Street, New York, N. Y.

DALLAS, TEXAS WICHITA, KANSAS CASPER, WYO.

SHREVEPORT, LA. HOUSTON, TEXAS

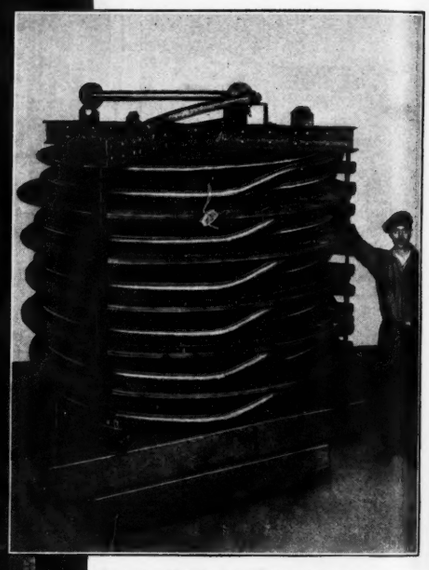
Stocks in All Principal Fields

PIPING BY MIDW



Carload of bends (16" and 18" O. D. pipe) ready for shipment from Los Angeles plant.

A large southern refinery was in a hurry for these bends from 22" O. D. pipe.



Coil for special refining process. Customer's inspector pronounced this—"The best coil job I ever inspected."

Large welded pipe fittings for natural gasoline plant. Modern procedure control governs all Midwest welding.

Coils made from 1 7 8" O. D. x 1 5 8" I. D. seamless steel tubing. The pipe in each was first continuously welded and then coiled on special machines developed by Midwest for that purpose.

The combined pipe fabricating capacity of the four Midwest plants far exceeds that of any other organization in the country.

THE GREATER MIDWEST

RESISTCOR

Resistcor-Seminole Pipe Handling Equipment pulling one unit of a double 10-inch pipe line across the Arkansas River, near Tulsa, Okla.

Speeding the Completion of Major Pipe Lines

Unusual among the major pipe lines under construction is an 800-mile double line, now being laid from the Glenn Pool, in Oklahoma, into Illinois.

Instead of the customary single line, two 10-inch lines are being laid, approximately five feet apart.

Laying of this line is being speeded by RESISTCOR Pipe Handling Equipment, including the famous Seminole-model Hoists and Booms and other well-known heavy-duty specialties. Other major lines on which RESISTCOR Equipment is saving time and money are:

Gulf, 100 miles; Cities Service, 500 miles; Phillips, 800 miles, and Missouri-Kansas, 900 miles.

Write or call either Resistcor office for full information about Resistcor Pipe Laying Equipment and Pipe Line Coatings.

RESISTCOR
Engineering Corporation

TULSA MUSKOGEE

Mobile Power That's Dependable

Wherever mobile power is needed in the oil industry you'll find the McCormick-Deering Industrial Tractor is the practical unit to put on the job. As a separate power plant or as the power heart of specialized equipment, it generates an abundance of efficient, economical power that can be readily applied to any kind of work.

The ability of the McCormick-Deering to combine with a wide variety of correctly engineered equipment has made this unit the standard of mobile power plants. It operates winches, pipe-handling booms, backfillers, ditchers, welders, spudders, drillers, crawlers, graders, and what not. And you have the assurance that every outfit powered by the McCormick-Deering has met the rigid requirements of the Harvester Company's experienced engineers.

A service organization that knows its tractors protects the McCormick-Deering and its equipment everywhere. This consists of 117 Company-owned branches in the United States and Canada, 44 McCormick-Deering Industrial Tractor distributors, many special equipment manufacturers, and thousands of McCormick-Deering dealers. For catalogs or information address any of the firms listed here or write us direct.

McCORMICK-DEERING
Industrial Tractor Distributors
in the Oil Country

J. D. Adams & Co.
INDIANAPOLIS, Ind.

Browning-Ferris Machy. Co.
DALLAS, Texas
HOUSTON, Texas

Concrete Machy. & Supply Co.
LOS ANGELES, Calif.

Cuyahoga Equipment Co.
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Industrial Machy. Co.
KANSAS CITY, Mo.

H. W. Moore Equipment Co.
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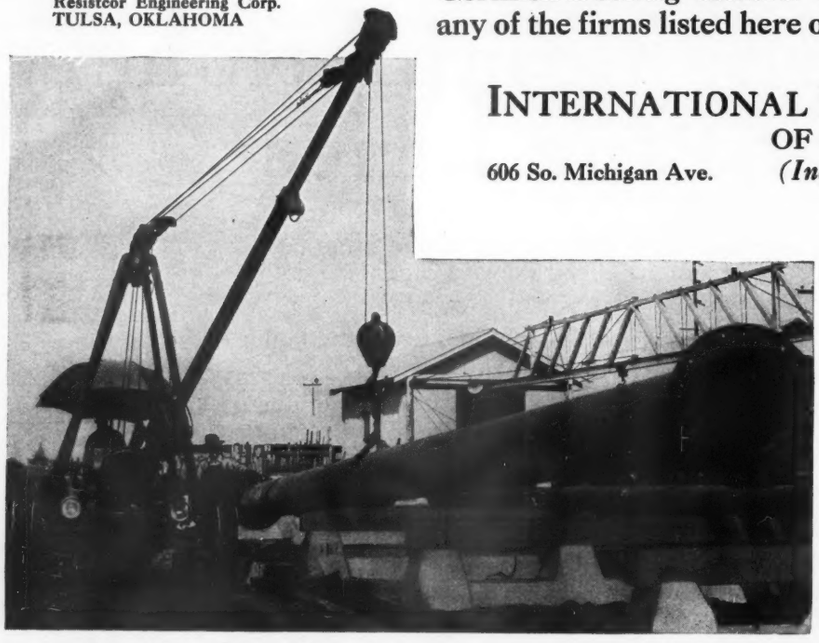
Option Equipment & Supply Co.
PITTSBURGH, Pa.

Resistcor Engineering Corp.
TULSA, OKLAHOMA



McCormick-Deering Industrial Tractor operating a crane for the Union Oil Co., Santa Fe Springs, Calif., handling 2-ton pipe for assembling in gas trap. During rush drilling periods this outfit operates 24 hours a day.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
606 So. Michigan Ave. *(Incorporated)* Chicago, Illinois

These Responsible Companies
Manufacture Oil Field Equipment
Powered by
McCORMICK-DEERING

Braden Mfg. Co.
TULSA, Okla.

Industrial Brownhoist Corp.
CLEVELAND, Ohio

Keystone Driller Co.
JOPLIN, Mo.

Resistcor Engineering Corp.
MUSKOGEE, Okla.

W-K-M Company, Inc.
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Ross-Meehan Foundries
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The Shaffer Specialty Co.
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The Star Drilling Machine Co.
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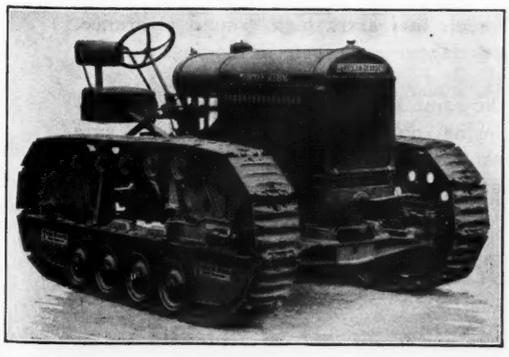
Trackson Co.
MILWAUKEE, Wis.

Williamette-Ersted Mfg. Co.
PORTLAND, Ore.

McCORMICK-DEERING
INDUSTRIAL TRACTORS

All-Purpose Tractor Power

TRACKSON
McCORMICK-DEERING



WHEN you buy a crawler-tractor you are pretty sure to choose the one that will handle the greatest number of different jobs, other things being equal. Trackson McCormick-Deering is designed and built with ALL your power needs in mind. It has wide clearance between the tracks and motor so that you can readily attach pipe booms, side winches, one-man graders, etc. And it is centered, fore and aft, between the crawlers so that you can install either front-end or rear-end hoists. Practical engineering of this sort gives you the widest possible range of usefulness in a single machine. The result is more work, faster work and a minimum investment in equipment. Write today.

Trackson Company
FULL-CRAWLERS & TRACTOR EQUIPMENT
524 CLINTON ST MILWAUKEE, WIS.

STANDARD Heaters

—On The Biggest Pipe Line Jobs!

Now Depending On STANDARD Heaters

Oklahoma Pipe Line Co. - - - Muskogee, Okla.
Prairie Pipe Line Co. - - Independence, Kans.
Sinclair Pipe Line Co. - - - - - Tulsa, Okla.
Hill, Hubbell & Company - - - Tulsa, Okla.
Shell Pipe Line Co. - - - - St. Louis, Mo.
E. A. Macpherson Co. - - - Dallas, Texas
Kelly Dempsey & Co. - - - Tulsa, Okla.
Hope Engineering Co., Mt. Vernon, Ohio
Oklahoma Contracting Co., Dallas, Tex.
Western Public Service Corp., Salt Lake City, Utah
Humble Pipe Line Co., Houston, Tex.
Gulf Pipe Line Co., Houston, Tex.
Williams Brothers - - Tulsa, Okla.
Asiatic Pipe Line Co., New York
Sheehan Pipe Line Co. - - - Tulsa
Smith Brothers, Inc. - - - Dallas
Bechtol & Kaiser, San Francisco Calif.
Empire Pipe Line Co., Bartlesville
Henry G. Lemons, Inc., Tulsa
Truman & Smith, Eldorado, Ks.
Southern Natural Gas, Birmingham, Ala.

A few "action" photos showing that wherever the pipe-line crew can go—through forest, field or swamp, in any weather — a STANDARD Heater can go, too, *and usually does!*

THE bigger the job, the surer you are to find STANDARD Tar Heaters delivering the "hot stuff". Join the famous organizations listed above and rely on STANDARDS to keep your contract on schedule.

Model "D" STANDARD Tar Heater is a large capacity oil burning kettle. 250, 500 and 1000 gallon sizes. Instant temperature regulation and perfect distribution of heat make for unusual fuel economy. Built to stand the "gaff" of day-in and day-out service over the roughest country. Constructed of heavy boiler plate steel, electric arc welded throughout. Has wide tread, heavy, roller bearing wheels and extra high ground clearance. Anti-splash vat eliminates danger and waste in moving.

Model "C" has the same speed, economy and safety features as Model "D". Spring snubbers on each side of the axle cushion the kettle against road jolts. 55, 80, 105 and 165 gallon sizes. Just the thing for pipe-line maintenance and emergency work.

Write or Call for Information

Standard Steel Works

North Kansas City, Mo. U.S.A.

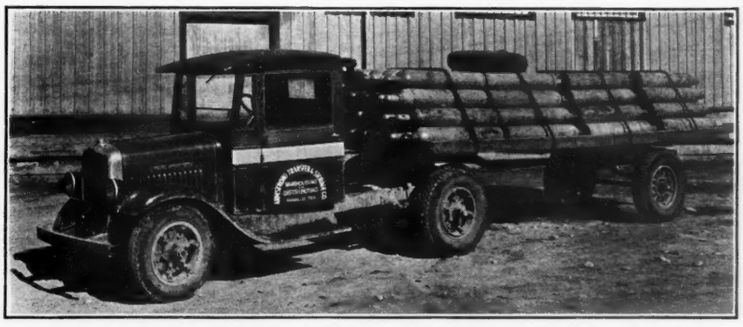
Resistcor Engineering Corporation, Distributors, Tulsa, Okla.

SPRINGFIELD TRANSPORTATION

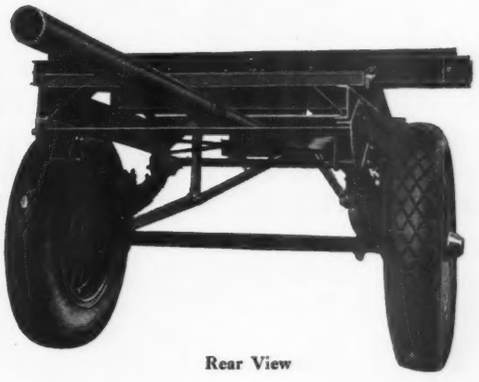
SPRINGFIELD POLE TYPE SEMI-TRAILER

Manufactured in

1½, 2, 3 and 5 tons, either Steel or Wood Frame Construction, and used by some of the largest companies. We have a type and size for your every need—Ease of repair and sturdiness in all sizes. *Write for Bulletins on Trailers or Oil Wagons.*



Hauling oxygen tanks for Phillips Petroleum Co., at Borger, Texas.
Load weighs 15,000 Lbs. Springfield Semi-Trailer, rear end rated 2 tons—Model S-60.



Rear View

SPRINGFIELD
WAGON & TRAILER CO.
SPRINGFIELD, MO.

Branches at Dallas and Memphis

DISTRIBUTORS:

RESISTCOR ENGINEERING CORPORATION
OKLAHOMA NATURAL GAS BUILDING
TULSA, OKLAHOMA

Export Agents—SHERMAN & SHEPPARD CO., NEW YORK

Part of a Delivery of Springfield Oil Field Trailers to One of the Largest Pipe Line Construction Companies

Model "T" Heaters purchased by Southern Natural Gas Corp. Sold through Resistcor Engineering Corp.

FOR PIPE LINE WORK
USE "AMERICAN" ENAMEL, PITCH and ASPHALT HEATERS
and Other Equipment Necessary for Application

AMERICAN CHIEF MODEL H

equipped with double coilless type oil burner for kerosene and distillate in sizes from 250 to 1000 gallons.

AMERICAN MODEL T HEATER

equipped with 6" steel face roller bearing wheels with snaking skid and shields. Sizes 60, 110 and 165 gals.

TORCHES

The American Coilless Torches made in single, double or triple for bending pipe on the job.

SERVICE IS OUR WATCHWORD

AMERICAN STEEL WORKS

1211 W. 27th St. KANSAS CITY, MO.

SEND US YOUR INQUIRIES

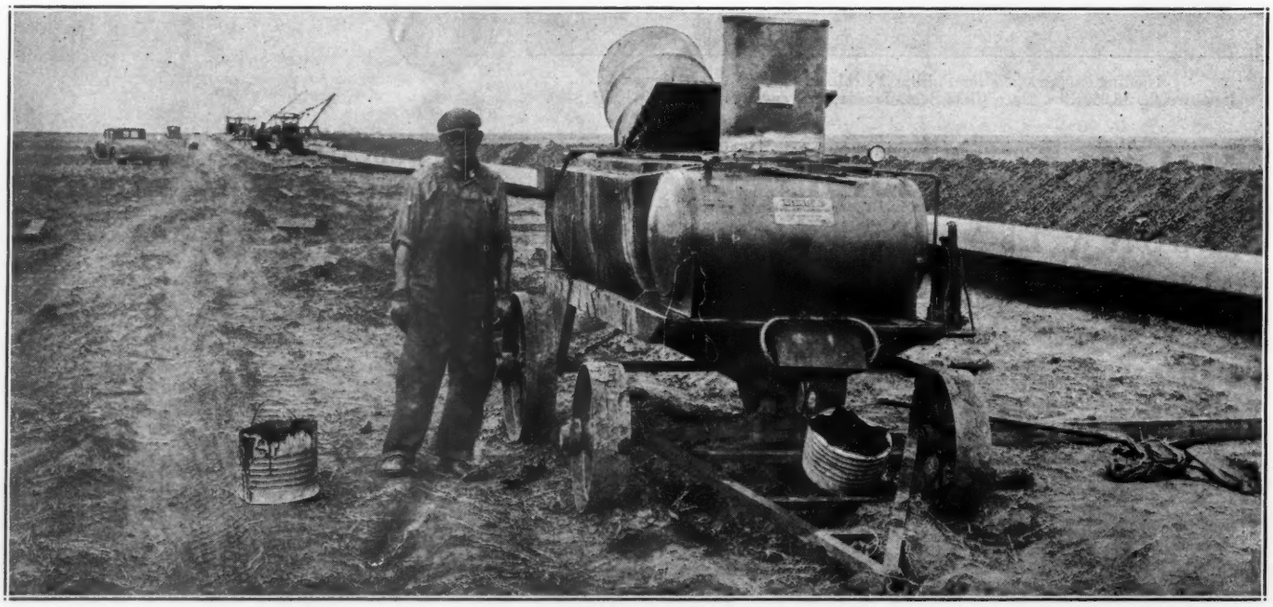
PARTIAL LIST OF USERS OF "AMERICAN" PRODUCTS

PIPE LINE COMPANIES

Arkansas Natural Gas Co.
Atlantic Pipe Line Co.
Buckeye Pipe Line Co.
Cities Service Gas Co.
Continental Oil Co.
Dixie Gulf Gas Co.
Gulf Pipe Line Co.
Houston Gulf Gas Co.
Houston Pipe Line Co.
Humble Pipe Line Co.
Imperial Oil, Ltd.
Lone Star Gas Co.
Los Angeles Gas & Elect. Co.
Management Engineering Corp.
Mississippi Valley Fuel Co.
Oklahoma Natural Gas Co.
Oklahoma Pipe Line Co.
Pacific Gas & Elect. Co.
Phillips Petroleum Co.
Prairie Pipe Line Co.
Shell Pipe Line Corp.
Sinclair Pipe Line Co.
Skelly Oil Co.
Southern California Gas Co.
Southern Natural Gas Co.
Standard Oil Co. of Ind.
Texas Cities Gas Co.
Texas Empire Pipe Line Co.
Texas Pipe Line Co.

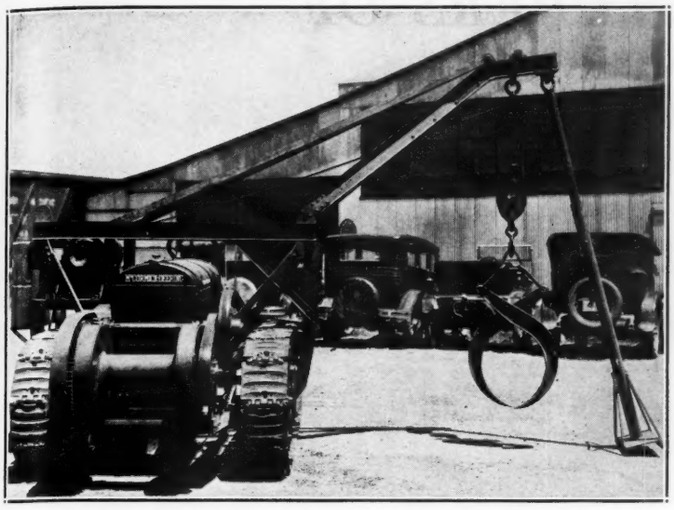
CONTRACTORS

Connor & Son
Kelly Dempsey & Co.
MacPherson Construction Co.
O'Brien Bros. Construction Co.
N. A. Saigh
Sheehan Pipe Line Construction Co.
Smith Bros.
Truman-Smith Construction Co.
Williams Bros., Inc.

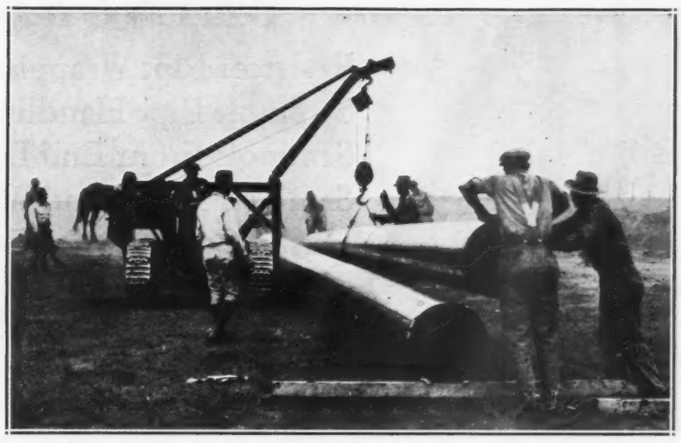


American Chief Heaters used by Oklahoma Contracting Co. at Stinnett, Texas. Sold through Resistcor Engineering Corp.

Resistcor Equipment Out in the Field



This Resistcor Husky or combination pipe line unit consists of a Seminole pipe-handling boom and Seminole front-end hoist mounted on a McCormick-Deering 10-20 tractor with Trackson full crawlers. This makes a unit especially applicable for river crossing and for handling large inch pipe.

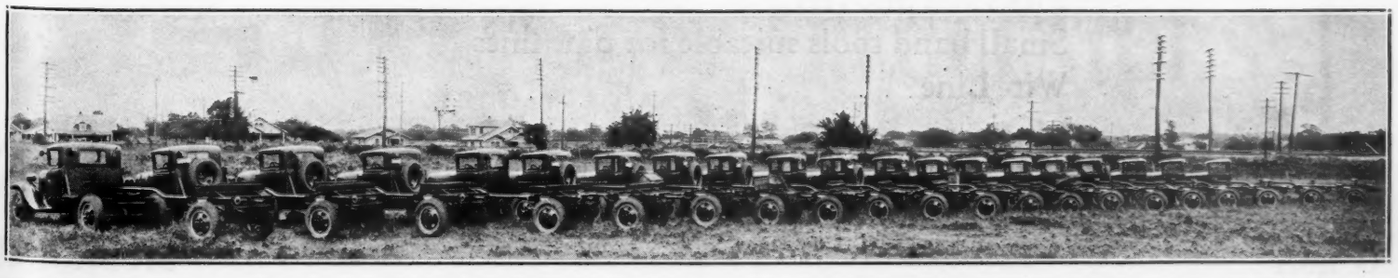


McCormick-Deering tractor with Seminole boom used by the Oklahoma Contracting Co. at Stinett, Tex., in handling 60-foot 22-inch pipe in building the Missouri-Kansas pipe line.

Seminole boom setting river clamps on the Cities Service 16-inch line being laid by Truman & Smith of Eldorado, Kans.

International Harvester six-speed trucks equipped with Springfield trailers, used by the Oklahoma Contracting Co. in building the Ajax pipe line.

New pipe-wrapping machine manufactured and marketed by the Resistcor Engineering Corp.



Springfield trailers and International Harvester trucks sold by the Resistcor Engineering Corp. for use in building the Ajax pipe line from Glenn Pool, Okla., to Wood River, Ill.

RESISTCOR ENGINEERING CORPORATION

MANUFACTURERS OF

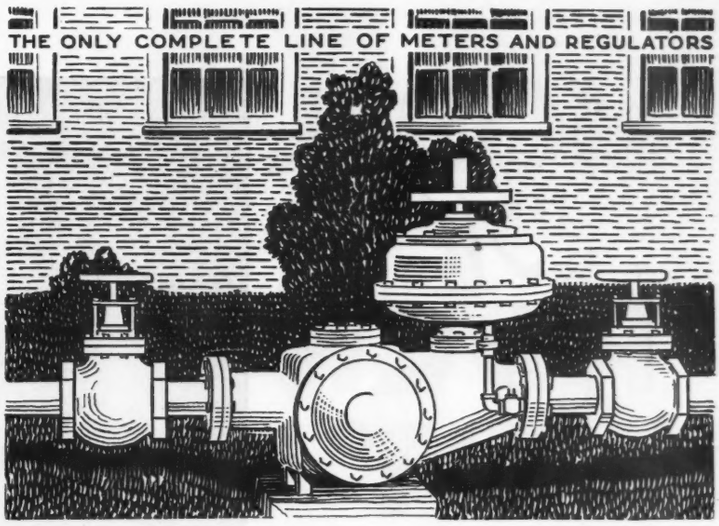
Resistcor Pipe Wrapping Machine
Seminole Pipe Handling Booms
Seminole Front End Booms
Seminole Front End Winch
Husky Combination Boom and Winch for McCormick Deering Tractors
Seminole Ball Bearing Blocks
Sheehan Line Up Clamps
Seminole Pipe Hooks
Belt Slings
Samson Oilfield Hoist
Champion Truck Winches for Ford and Chevrolet
Samson Winches for Fordson Tractors
Champion Ton and one-half Trailers
Samson Rear Winch and Boom for Caterpillar 30 Tractor

DISTRIBUTORS FOR

McCormick Deering Tractors
Trackson Full Crawlers
Dorsey Skidders for river pulling
Ingersoll Rand Air Compressors and tools
Springfield Trailers
Buckeye Backfillers
Buckeye Ditching Machines
Universal Right-of-Way Shovels
Novo Mud Hog Pumps
American Steel Tar Kettles
Standard Steel Tar Kettles
Coating Canvasses
Coating Rugs
Steel Wire Brushes
Picks and Shovels
Small hand tools suitable for pipe lines
Wire Line

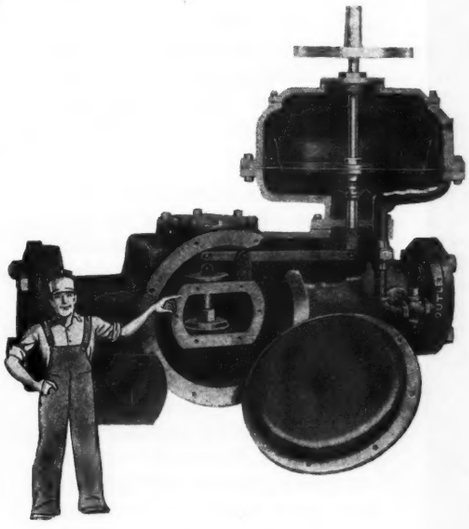
RESISTCOR ENGINEERING CORPORATION

TULSA - - - - - - MUSKOGEE



FOR LOW PRESSURE REGULATION -EMCOS

"Supersensitive"—the tribute payed by gas engineers to the EMCO low pressure regulator. Long sensitive diaphragm stroke, relatively short valve stroke, permits large diaphragm area responsible for high degree of accuracy. Diaphragm type seal used in diaphragm stem—eliminates friction, pumping and chattering.



Of course the Removable valve box; One piece body casting; Interchangeability of parts; are found in EMCO low pressure regulators.

EMCO PRINCIPLES

Removable Valve Box · One Piece Body Casting
Interchangeable Diaphragm Heads
Long Sensitive Diaphragm Stroke
Relatively Short Valve Stroke

EMCO METERS AND REGULATORS

PITTSBURGH EQUITABLE METER COMPANY

Main Office and Works—Pittsburgh, Pa.

New York City · Chicago, Ill. · Los Angeles, Calif. · Tulsa, Okla. · Dallas, Texas · Columbia, S. C. · Salt Lake City · Kansas City, Mo. · Seattle, Wash. · Houston, Texas

MODEL "M" ROCK BIT

and

3-Point Reamer

THIS sturdy tool makes hole fast through the hardest formations, and keeps the hole out to full gauge—and straight. The "Safety" cones do not wear out by riding each other—their outside bevels are hard surfaced with stellite and they roll along hour after hour, cutting maximum footage in record time.

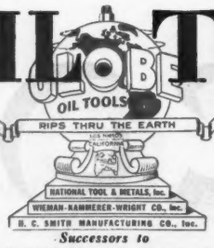
Other special features are—the one-piece shank of special design which permits dismantling of cones without removing shank from drill collar—main force of circulating water directed to bottom of hole instead of side walls — slush lubrication is used to replace mechanical lubricator — reamers have greater cutting surface area than conventional type — all parts specially heat treated.

See our exhibit at the Tulsa Exposition— Booths 63 and 64 California Building.

SEND for complete information about the Model "M" Rock Bit and other products of Globe Oil Tools Co.

GLOBE OIL TOOLS CO.

LOS NIETOS, CALIFORNIA



Successors to
H. C. Smith Manufacturing Co., Inc.
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National Tool & Metals, Inc.
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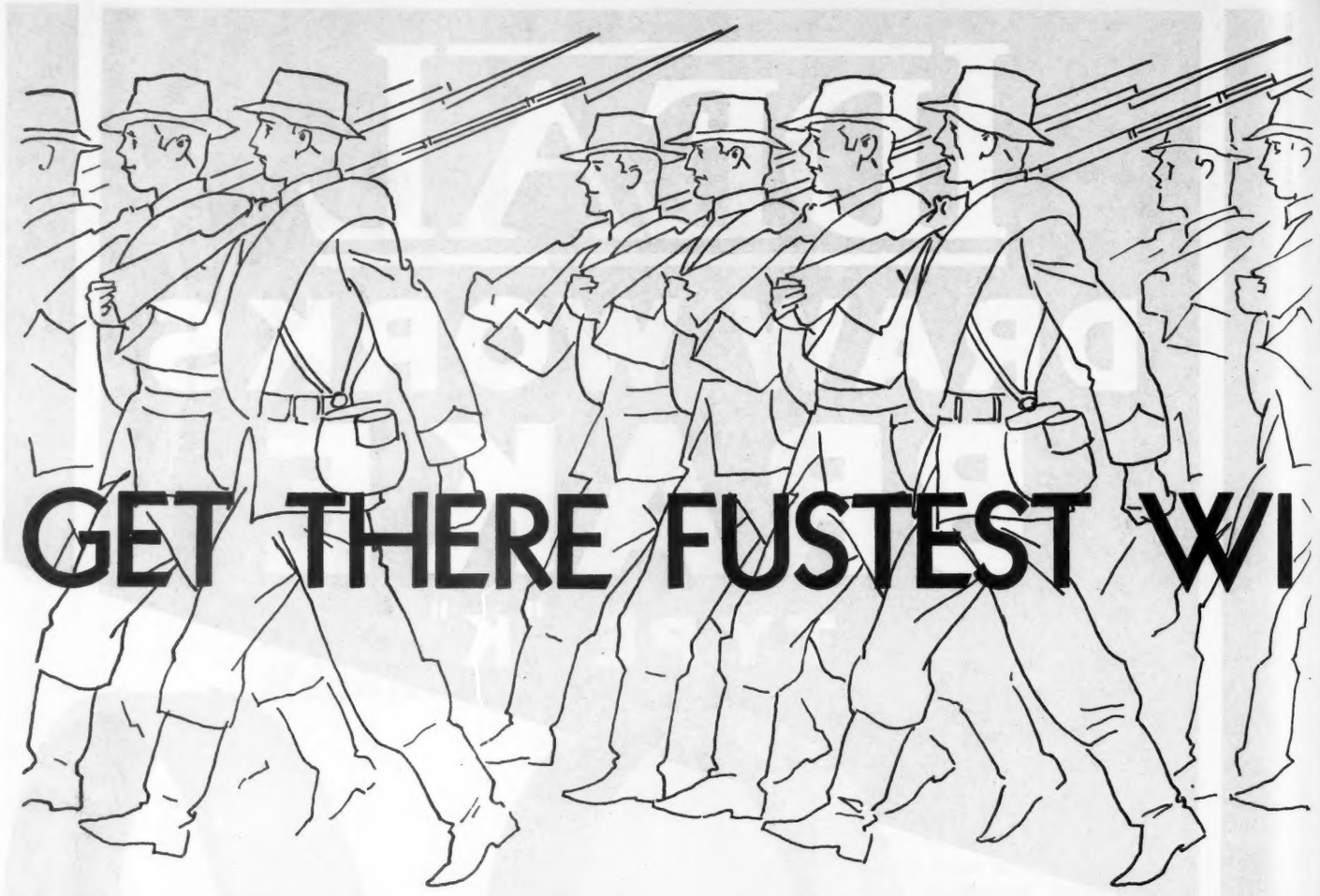
IDEAL
DRAW WORKS BRAKE
TYPE "K"

Designed for IDEAL Draw Works 34-26 and 7½-RB but is also adaptable to other types of Draw Works

Descriptive Bulletin
No. 91
Sent on Request

THE
NATIONAL SUPPLY
COMPANIES



GET THERE FUSTEST WI

DURING the Civil War a Confederate officer gave this simple formula for winning battles, "Get there fustest with the mostest men."

Modern electric steel castings help the manufacturer to do exactly that, in a business way.

For today, we swing along to an industrial tempo the like of which the world has never seen. Better products are bettered. Designs are constantly improved.

But the costs of producing are driven lower and lower.

The Three Points

And truly modern manufacturing must seek three things, to which old-fashioned management paid only cursory attention:

(1) super-quality of product
(2) lower and lower costs
(3) the ability to change design or methods upon a moment's notice.

Especially to the manufacturer using small, variable section and complicated parts, electric steel castings bring an answer on all three points.

More Important

But even more important, to economical production, especially when the run is short—electric steel castings involve no high investment in dies or special setups. Constant change, the watchword of progress, is no financial or physical hazard.

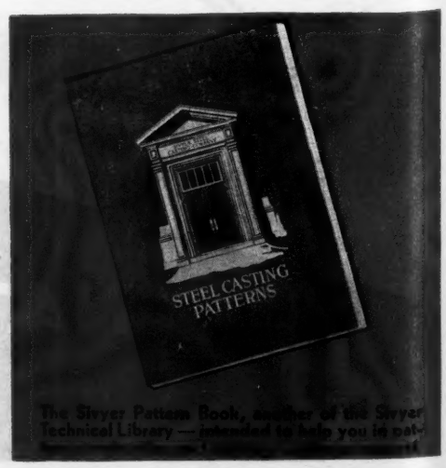
When new designs are demanded from the field or engineering department they can be made, almost at once—with but a minimum of

In the normalized and drawn condition, Miraculoy has the following remarkable properties:

Tensile Strength	115,000 pounds
Yield Point	85,000 pounds
Hardness	275 Brinell
Reduction of Area	40%
Elongation in 2 Inches	18%
Impact Value 23 to 24 Foot Pounds Charpy	

MIRACULOY
A Sivyer Alloy Steel

Physical properties of the newest Sivyer Alloy — Miraculoy — which gives unusual machinability with no tremendous sacrifice in other qualities. Ask for information.



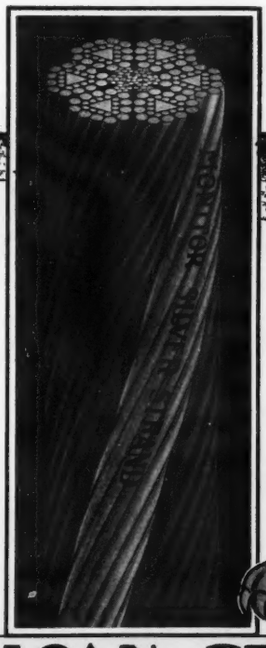
The Sivyer Pattern Book, number of the Sivyer Technical Library — intended to help you in pat-

AMERICAN
STEEL & WIRE COMPANY
WIRE ROPE
(ON THE YELLOW REEL)

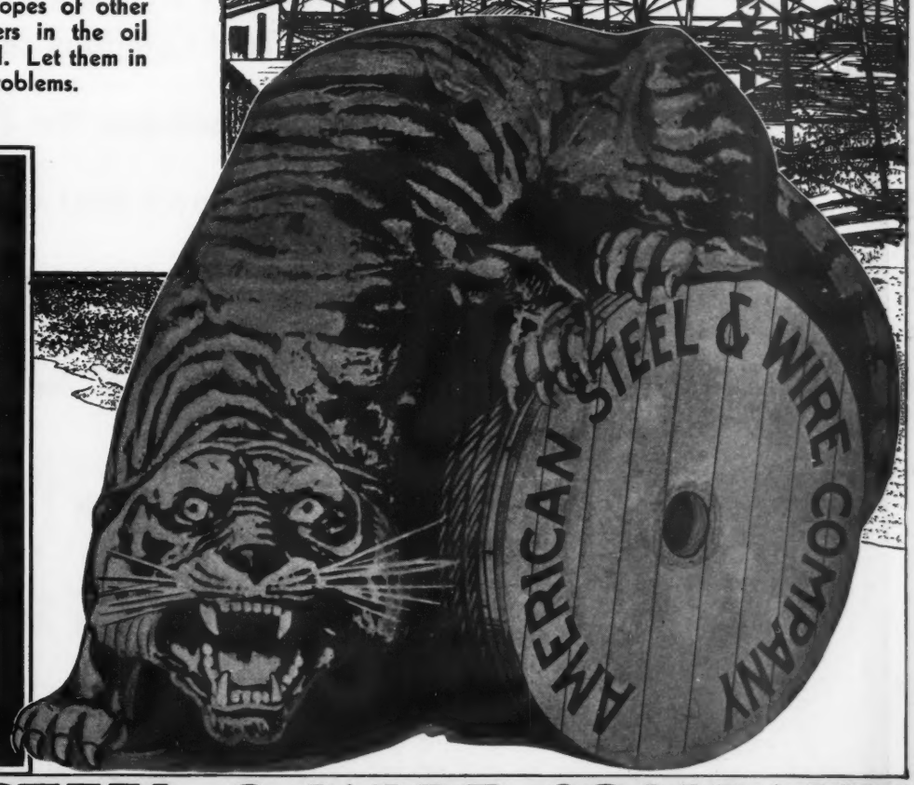
ALWAYS DEPENDABLE in Oil Field SERVICE

Here is the Oil Field's most popular rotary drilling and casing line. This construction of wire rope is composed of flattened strands.

By means of Flattened Strand Rope a much larger per cent of the surface of the strand is put in contact with the sheave or drum, in fact the wearing surface is from 100 to 150 per cent greater than in ropes of other construction. Our engineers in the oil country are at your disposal. Let them in on your wire rope problems.



Type "B" Flattened Strand Rotary Drilling and Casing Line



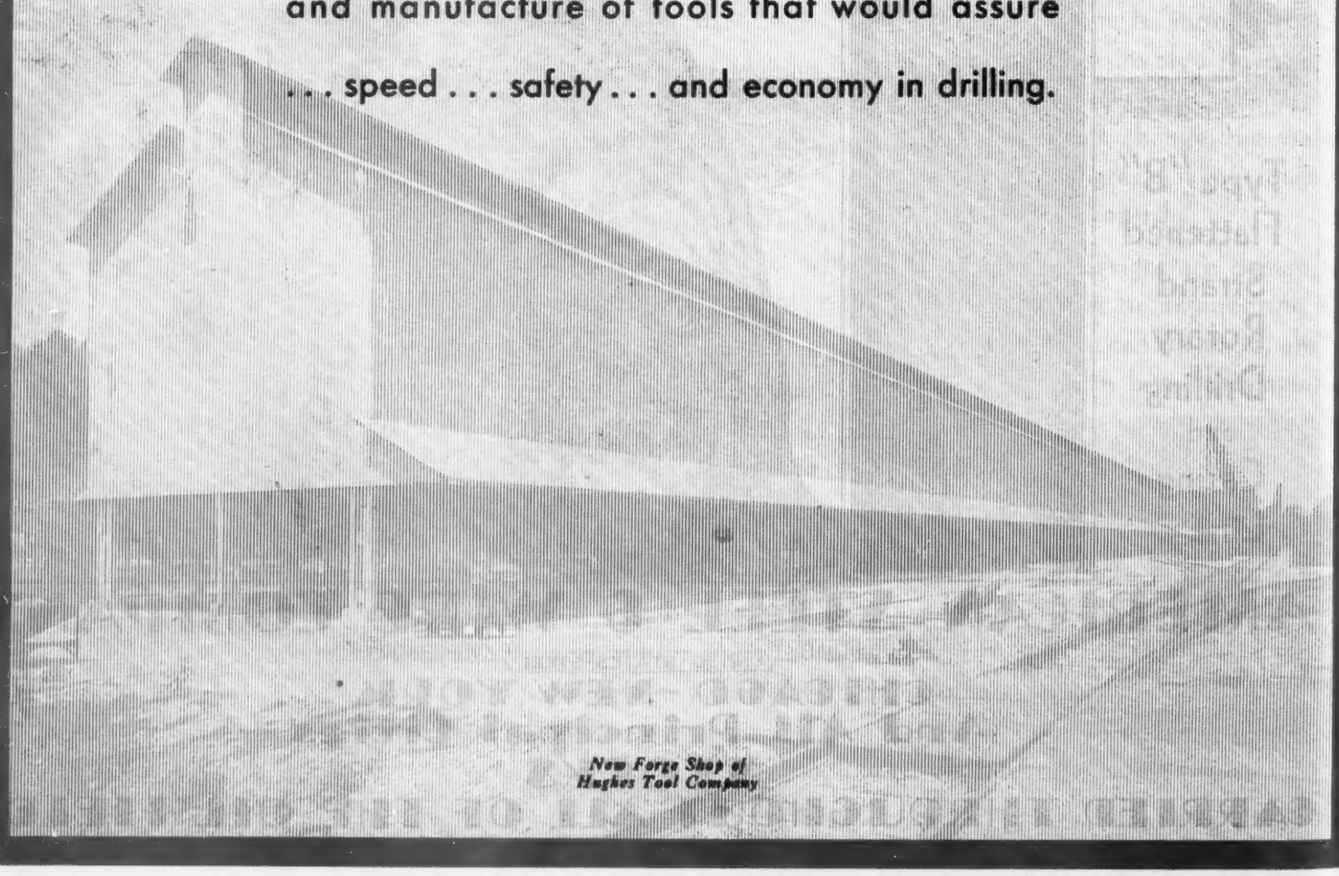
AMERICAN STEEL & WIRE COMPANY

SUBSIDIARY UNITED STATES STEEL CORPORATION

CHICAGO - NEW YORK
And All Principal Cities
STOCKS
CARRIED THROUGHOUT ALL OF THE OIL FIELDS

When the Hughes Tool Company was organized some twenty years ago it was realized that future success and growth depended entirely on the extent of service rendered by the company to the Petroleum Industry as a whole.

Many were the problems and difficulties confronting the operators and drillers . . . and the founder of Hughes Tool Company set as the life task of himself and associates the development and manufacture of tools that would assure . . . speed . . . safety . . . and economy in drilling.



New Forge Shop of Hughes Tool Company

POSITIVELY THE OUTSTANDING SUCKER ROD ON THE MARKET TODAY

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

IMPROVED

MECHANICALLY & METALLURGICALLY

. . . PROVED

BY FIELD SERVICE

Axelson Manufacturing Co., Ltd.
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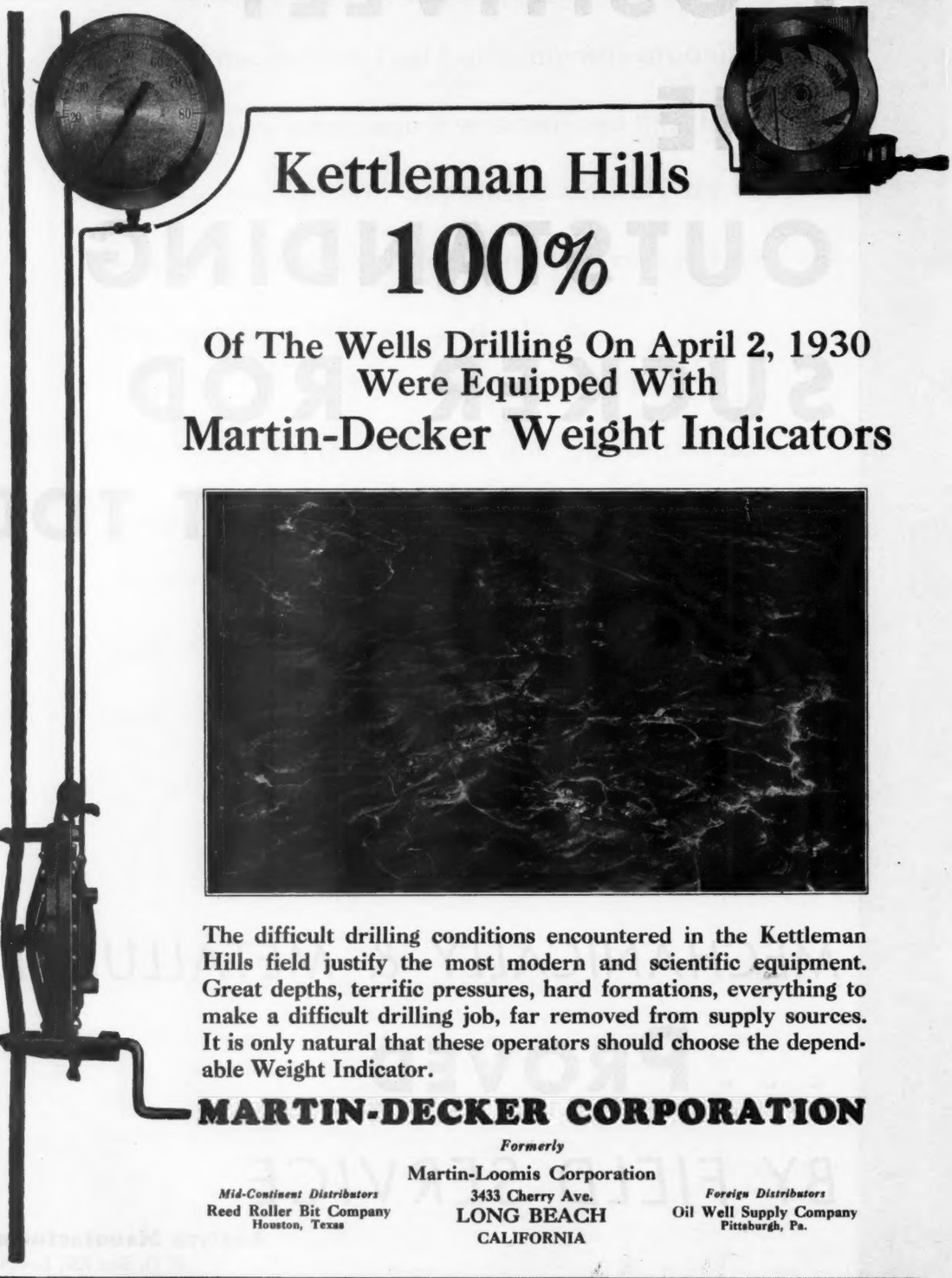
New York City, 30 Church St.
Mid-Continent and Eastern Distributors
Frick-Reid Supply Corporation

AXELSON SUCKER RODS

MARTIN-DECKER AUTOMATIC RECORDING WEIGHT INDICATOR



Kettleman Hills

100%

Of The Wells Drilling On April 2, 1930 Were Equipped With

Martin-Decker Weight Indicators

The difficult drilling conditions encountered in the Kettleman Hills field justify the most modern and scientific equipment. Great depths, terrific pressures, hard formations, everything to make a difficult drilling job, far removed from supply sources. It is only natural that these operators should choose the dependable Weight Indicator.

MARTIN-DECKER CORPORATION

Formerly

Martin-Loomis Corporation

3433 Cherry Ave.

LONG BEACH

CALIFORNIA

Mid-Continent Distributors
Reed Roller Bit Company
Houston, Texas

Foreign Distributors
Oil Well Supply Company
Pittsburgh, Pa.

WEIGHT RECORDING, MEASUREMENT AND CONTROL

These Valuable Books Help Solve Pumping Problems

Goulds representatives are trained engineers, experts in the solution of pumping problems.

EVERY engineer and operator who specifies or selects pumps should have these four books. Data, curves, tables, formulas—used every day for the solution of pumping problems—are contained in convenient form for ready reference.

The Centrifugal Pump Selection Chart Books are particularly noteworthy. Nothing of this kind has ever before been published. They answer all questions as to what pump to use for a given job—speed, size of motor, complete construction details, dimensions, etc.

These data are based on the experience gained by Goulds in 82 years of pump development and manufacture. If you have not received your copies, write to-day.

Have You these Books?

BULLETIN 200—Centrifugal Pump Selection Charts—Double-suction, Single-stage Pumps

BULLETIN 201—Centrifugal Pump Selection Charts—Multi-Stage Pumps

BULLETIN 400—Pumpfax. A Hand Book on Pumping

BULLETIN 401—The Centrifugal Pump. Its Theory, Characteristics, Operation

Copies sent on request.

Goulds Pumps, Inc., Seneca Falls, N. Y.

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*NEW YORK 16 Murray St.; 19 Park Pl.
*TULSA 213 E. Archer St.
PITTSBURGH 636 Henry W. Oliver Bldg.
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ATLANTA Citizens & Southern Bank Bldg.

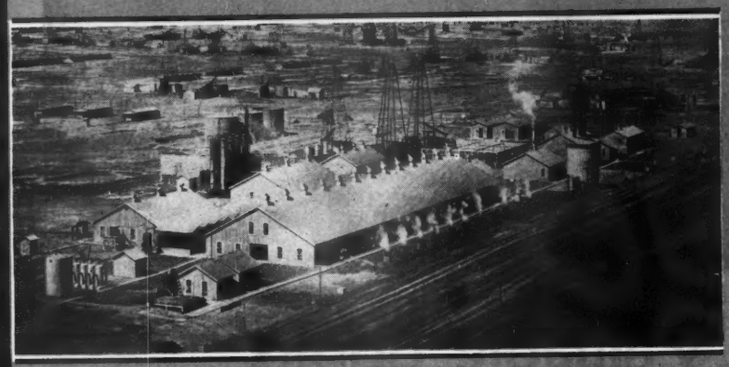
**Branch Warehouses*

Representatives in all Principal Cities

PUMPS FOR EVERY PURPOSE

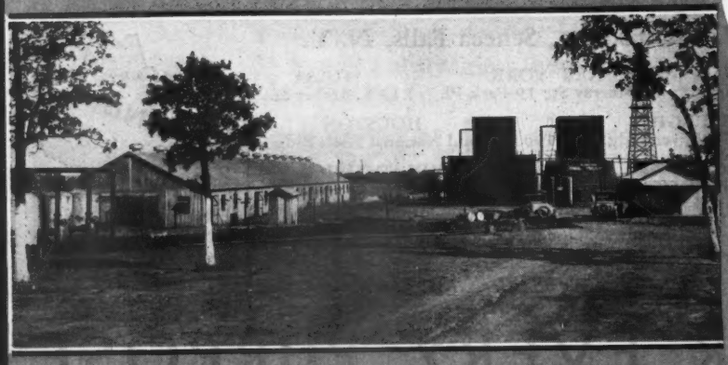
PROVED IN THE FIELD

COOPE TYPE

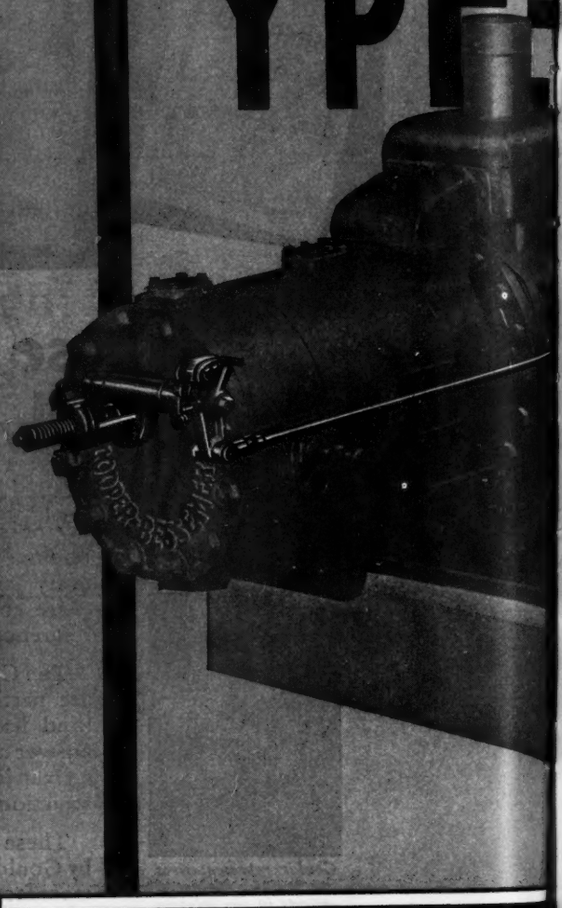


The Gypsy Oil Company's Plant No. 1 at Tonkawa, Oklahoma, containing twelve Type-10 Compressor Units.

The Carter Oil Co. Grisso Plants at Seminole, Oklahoma, containing a total of thirty Cooper-Bessemer Type-10 Units.



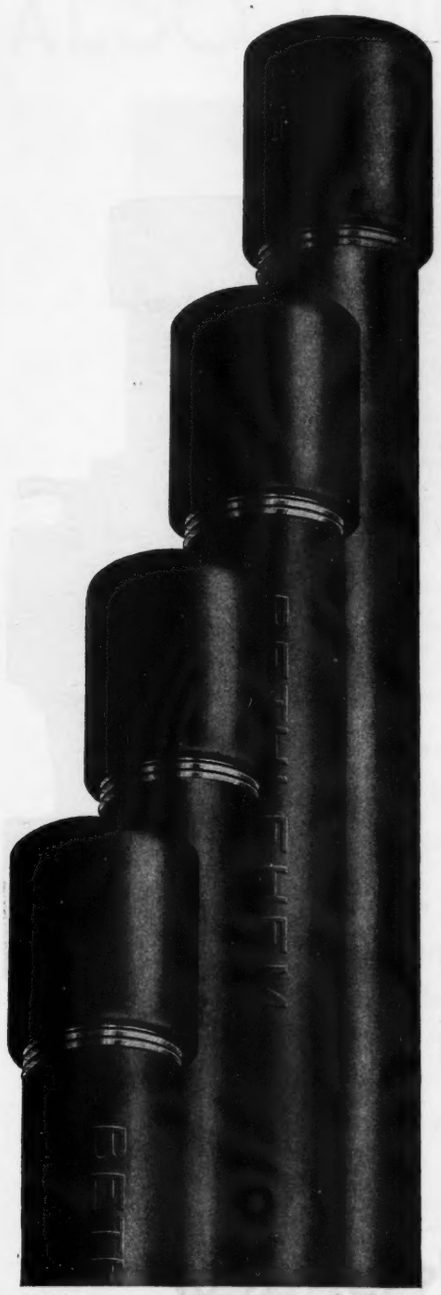
The Indian Territory and Illuminating Oil Company's Davis Plant, containing eight Type-10 Single and four Type-10 Twin Compressor Units.



GAS ECO

Saving in Fuel
Increased Power
Easier Starting

MADE TO ESTABLISHED STANDARDS



Bethlehem maintains at Houston, Texas, and Wilmington, Calif., well assorted stocks of line pipe, ready for immediate shipment. Both threaded and coupled and plain-end pipe are included in these stocks.

CAREFUL workmanship and high-grade material go into the manufacture of Bethlehem Steel Pipe. Each step in its production is carried out under the supervision of men thoroughly experienced in pipe manufacture. Strength, uniformity, ductility, sound welds, clean, smooth surfaces, freedom from flaws—these qualities are assured by care in manufacture and by tests and inspections far more rigid than standards require.

In addition to these features the purchaser of Bethlehem Steel Pipe is assured of a product that conforms in every respect to a definite and long-established standard of quality—the standard to which this company has been working throughout more than half a century devoted to the manufacture of steel and steel products.

The nearest Bethlehem District Office will gladly give you further information about Bethlehem Steel Pipe. Your inquiry or order will receive immediate attention.

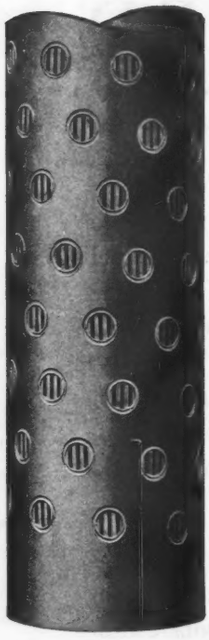
BETHLEHEM STEEL COMPANY, General Offices: Bethlehem, Pa.
District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu

Export Distributor: Bethlehem Steel Export Corporation, 25 Broadway, New York City

BETHLEHEM STEEL PIPE

NEW IMPROVED McEVOY STRAINER



A NEW PROCESS, which has been under development by McEvoy engineers for several years, has recently been made standard practice in the McEvoy Factory.

This process results in improvements that are astounding in spite of the fact that the previous McEvoy Screen had never been excelled.

Those who have seen and are using the NEW IMPROVED McEVOY STRAINER with case hardened steel or brass strainer plugs, have been impressed with its new features. It is a true example of the work of McEvoy engineers who are constantly experimenting in advance of present methods and requirements. Their recent creation, the NEW IMPROVED McEVOY STRAINER is a clear step forward in making a good strainer better.

Make a special effort to see the NEW IMPROVED McEVOY STRAINER or send for NEW CATALOG.

McEVOY UNIVERSAL HEAD

Stands Pressure ◆ No Gas Leaks

It is a serious matter to have gas leaks. Use the McEVOY UNIVERSAL HEAD that is used so successfully in the Refugio Field and other fields where the pressure is terrific. The McEvoy Universal Head prevents leaks and stands the pressure.

When used as a drilling control head with main body mounted in casing and with Automatic Safety Pressure Head Attachment close at hand, you need have little fear of the fury of gas pressure.

The drill stem can be raised to the nearest coupling or tool joint below the head, and the Automatic Safety Pressure Head dropped into place. It locks itself at once. The weight of the drill stem resting on it makes a pressure tight joint.

While seated in the spider, pump pressure may be applied to hold down gas pressure. After pressure subsides, the safety pressure attachment may be quickly removed and drilling resumed. The Automatic Safety Pressure Head may be used at any time during the drilling to force the mud into any loose sand or caving strata.

The McEVOY UNIVERSAL CASING CONTROL HEAD is truly "universal." It meets every need of the top of the well from "drilling-in" to "pumping."

Write for NEW Catalog

J. H. McEVOY & COMPANY

HOUSTON, TEXAS, U.S.A.

Pacific Coast Branch: McEVOY SCREEN PIPE CO., 2428 E. 56 St., Los Angeles, Calif.

NORTH SALEM, OHIO, IS ALSO UNION TERRITORY

UNION Drill Cable at a well in the North Salem, Ohio, field, being drilled by the Capitol Drilling Company, contractors and producers, J. W. Blackston, Pres. The men shown, left to right, are: W. N. Blackston, general utility man of the Capitol; B. R. Hill and W. Shroyer, roustabouts; R. R. Nixon, driller; and W. L. Kelsey, manager of Jarecki store at Cambridge, Ohio.

UNION Wire Lines have given such good service for leading Ohio operators that carload after carload of UNION Wire has been shipped into the Ohio fields.

UNION Wire Lines are manufactured entirely within our own modern plant. Thorough tests insure unvarying uniformity in every wire, every strand and every finished rope. Good service - - - consistently - - - is the result.

UNION WIRE ROPE CORPORATION
3 North Madison Ave., Tulsa, Oklahoma

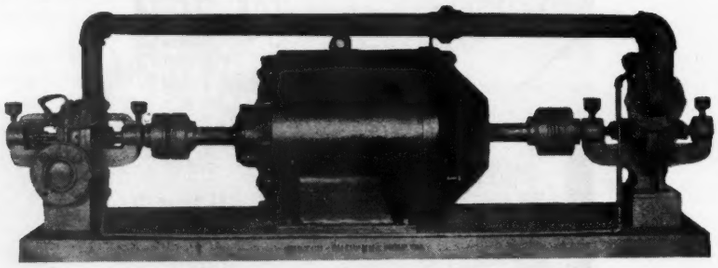
Oil Country Sales and Export Offices: 338 Kennedy Bldg., Tulsa
Branch Office and Warehouse: Portland, Ore.
Factory: 21st and Manchester Kansas City, Mo.

TRADE MARK

JARECKI MANUFACTURING COMPANY
Mid-Continent and Eastern Oil Field Distributors . . . Stocks at All Stores.

UNION WIRE LINES

This CHARGING UNIT



-*Employs Two Single-Stage* WESTCO PUMPS, *Operated at* 1750 r.p.m. *and Pumps* 100° a.p.i. *Gasoline Against* 250 lbs. *Net Pressure* (950 FEET HEAD)

There's always a job in the oil industry for the man with a stout heart, unlimited stamina, broad experience and exceptional skill. If Westcos were human, they would fit that description. New and important jobs are being given this remarkable pump every day by discerning oil engineers. The tougher the work, the better the Westco likes it.

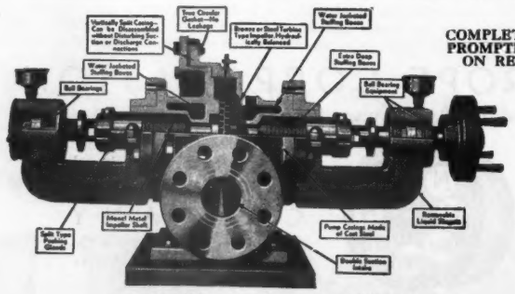
The true greatness of this pump may only be described partially by the following facts: They are utterly simple, with but one moving part and no metal to metal contact within the pump. They are in perfect hydraulic balance, no end thrust. They deliver a continuous, uniform flow without vibration and pounding or hammering in the pipe. Initial cost is low and they operate economically. There is no gas binding in a Westco. Fluctuating heads have little or no effect upon Westco volume or efficiency. They are thoroughly dependable and are perhaps longer lived than any other make or type of pump.

In short, Westco Pumps figure prominently in the latest and finest refinery installations and are deserving of the sober consideration of every refinery, natural gasoline plant and pipe line engineer.

WESTCO *TURBINE* PUMPS

WESTCO FEATURES

- No End Thrust Due to Perfect Hydraulic Balance
- Only One Moving Part
- No Metal-to-Metal Contact
- Wide Operating Range
- Entire Absence of Vibration
- Ball Bearing Construction
- High Pressure in Single Stage
- Can Be Directly Connected to Motor or Turbine
- Can Be Economically Furnished in Special Metals to Withstand Corrosion
- Capacities 5 to 350 G.P.M.



COMPLETE DATA PROMPTLY SENT ON REQUEST

Westco Water Jacketed Hot Oil Pump

WESTCO-CHIPPEWA PUMP COMPANY

Factory and General Offices—Davenport, Iowa

Branches:

New York Chicago San Francisco

Distributors in Principal Cities

DEEP-ROCK
ABSORPTION OILS

Uniform Specifications

Guaranteed Quality

Next to efficient plant equipment, quality Absorption Oil is the essential factor affecting the maximum extraction of gasoline from casinghead gas.

For consistent results, this quality Absorption Oil must be made to uniform specifications.

Deep-Rock Absorption Oils are so made.

For equipment requiring it, a new Special Deep-Rock Absorption Oil of low molecular weight is now available. This Special Absorption Oil is made with the same care by the same organization that makes the Standard Deep-Rock Absorption Oil, long respected for its uniform specifications.

Investigate these characteristics of Deep-Rock Absorption Oils:

Maximum concentration of solute.

Minimum carry-over into run down tanks.

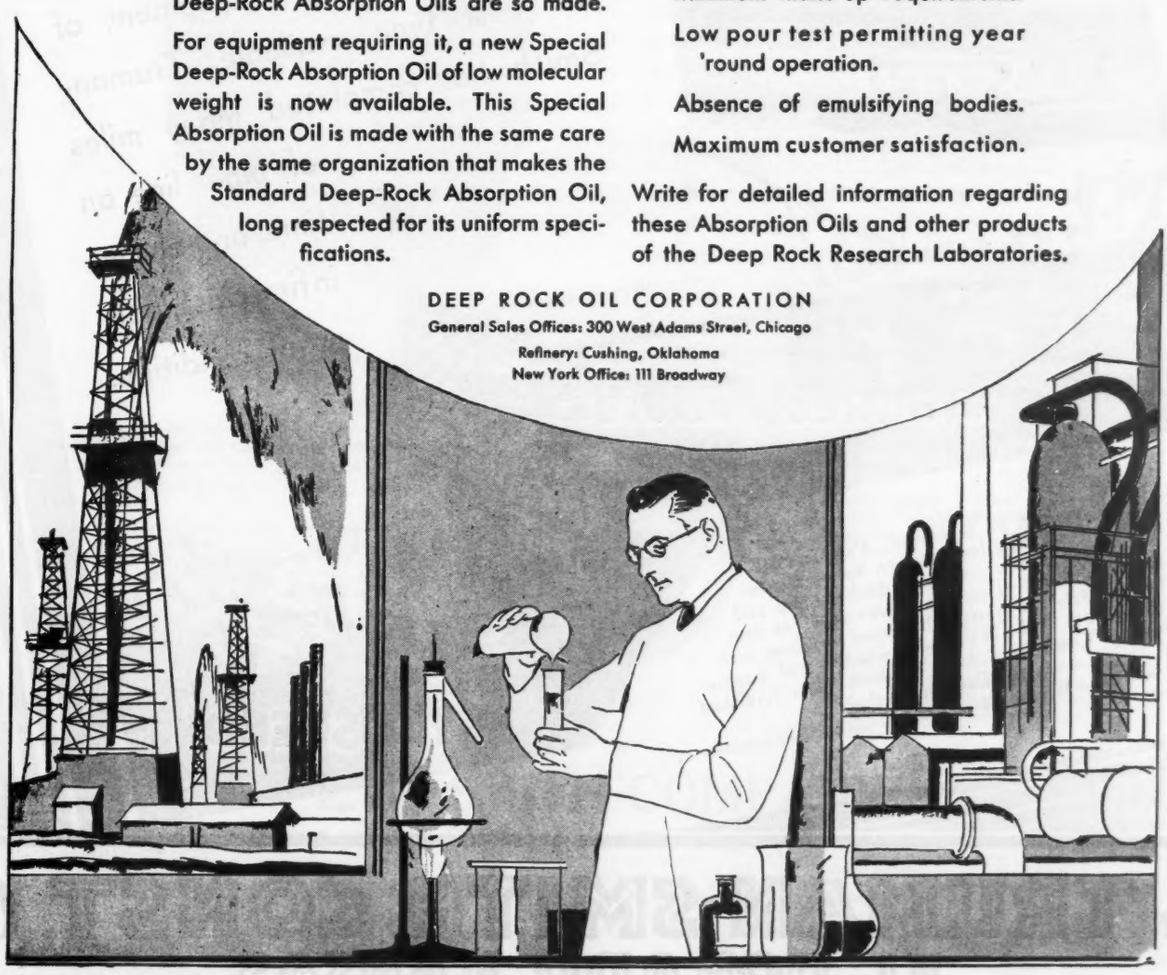
Minimum make-up requirements.

Low pour test permitting year 'round operation.

Absence of emulsifying bodies.

Maximum customer satisfaction.

Write for detailed information regarding these Absorption Oils and other products of the Deep Rock Research Laboratories.



DEEP ROCK OIL CORPORATION

General Sales Offices: 300 West Adams Street, Chicago

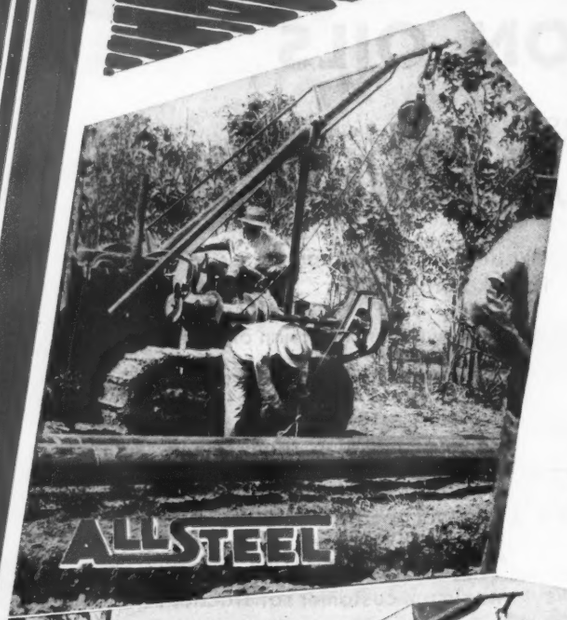
Refinery: Cushing, Oklahoma

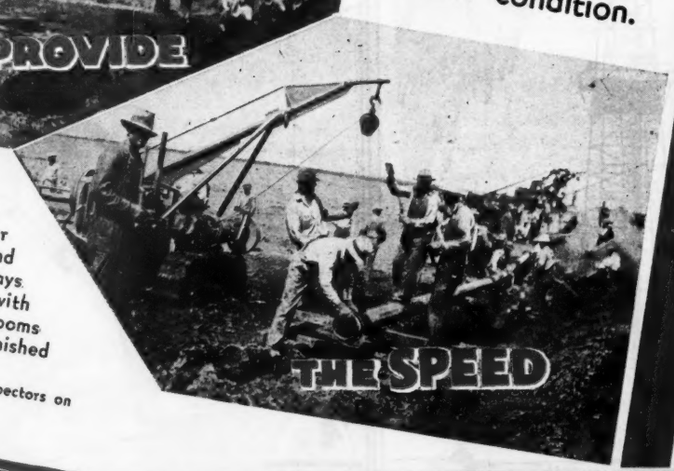
New York Office: 111 Broadway

MAKING SPEED WITH MODERN EQUIPMENT

THE remarkable speed this firm has made, and continues to make daily on pipe laying jobs, is attributed largely to the efficiency of their modern equipment.

With ample reserve equipment of the best type available, Truman-Smith has completed many miles of pipe line on time, and always in first class, leak-proof condition.





Two gangs working on the Skelly Oil Co's six and eight inch oil pipe line between Valley Center and McPherson, Kansas, recently ditched, laid and back-filled 41½ miles of pipe in sixteen days! 14 days ahead of schedule! This remarkable speed was done with four Model 30 ALLSTEEL side winches and booms mounted on "Caterpillar" 30's, two back-fillers furnished by ALLSTEEL and four Buckeye ditchers.
This line was tested, found leak-proof and approved by Skelly inspectors on the seventeenth day.

The TRUMAN-SMITH CONST. Co.
EL DORADO, KANSAS.

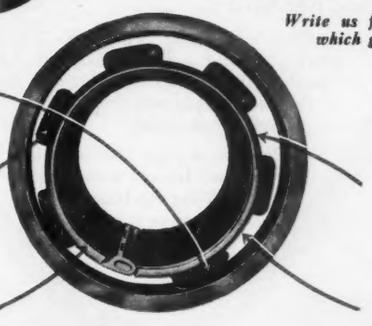
EMSCO
Free-Circulation PROTECTORS

Getting down to basic facts, here are the

Reasons for EMSCO Supremacy

Full protection with minimum wear — that's the reason for Emsco supremacy. A careful analysis of the chart clearly shows why the Emsco protector protects better, renders more satisfactory service, and wears longer than it is possible for any other type of protective appliance to do. It explains why Emsco protectors actually last from four to ten times longer and yet do not restrict circulation — two very good reasons why oil men who know prefer them above all others.

Write us for illustrated folder which gives all the facts in detail.



Only one of the tough rubber bumpers can come in *full contact* with the casting at one and the same time.

Beveled edges plus the small area of contact, further aided by the lubricating effect of the circulating mud, make friction absolutely impossible.

The body of the rubber protector provides the basic strength to withstand shocks and strains *without increasing surface area of contact between protector and casing.*

Tough rubber bumpers widely separated make air pockets impossible, eliminating friction on the non-skid principle.

Unrestricted circulation — area of clear space, by actual measure, is greater than the total volume of fluid forced through rotary hose.

E. M. SMITH COMPANY

637 So. Clarence St., Los Angeles, California

Distributed by
THE CONTINENTAL SUPPLY COMPANY
General Offices: St. Louis

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224 Traders Building, Calgary, Alberta, Canada

Export Offices:
CONTINENTAL EMSCO COMPANY, INC.
74 Trinity Place, New York

London Offices: 316-17 Dashwood House,
Old Broad St., E.C. 2

INSLEY

Insley Speeds Up Pipe Laying

A Half-Yard Insley Shovel or Skimmer grading right-of-way in front of the trenching machine smooths the way for the trencher, gives more trench per day and therefore more pipe laid and backfilled per day.

The Half-Yard Insley is flexible—it gets over ground rapidly — gets out of tight places easily — handles a lot of dirt in a day's time — and permits the trencher to develop full speed.

Prominent pipe line contractors use Insleys with their trenching machines because they speed up pipe laying.

A Great Trench Excavating Combination:

INSLEY Half-Yard with PARSONS Ditcher

THE Parsons is outstanding in heavy duty, rugged construction, flexibility in digging speeds and adaptability to greatest variety of conditions. Ask for Parsons catalog.

N. E. C. LINES

KOEHRING
Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dumptors.

INSLEY
Excavators; Concrete Placing Equipment, Cars, Buckets, Derricks.

T. L. SMITH
Tilting and Non-tilting Mixers, Pavers, Weigh-Mix.

PARSONS
Trench Excavators, Backfillers.

C. H. & E.
Portable Saw Rigs, Pumps, Hoists, Material Elevators.

KWIK-MIX
Mixers: Concrete, Plaster and Mortar.

HANDLING the entire N. E. C. line, we are obligated to maintain a standard of localized service consistent with the national service-standard of N. E. C.! The scope of N. E. C. lines gives you all advantages of centralized buying.

Address nearer of these two:

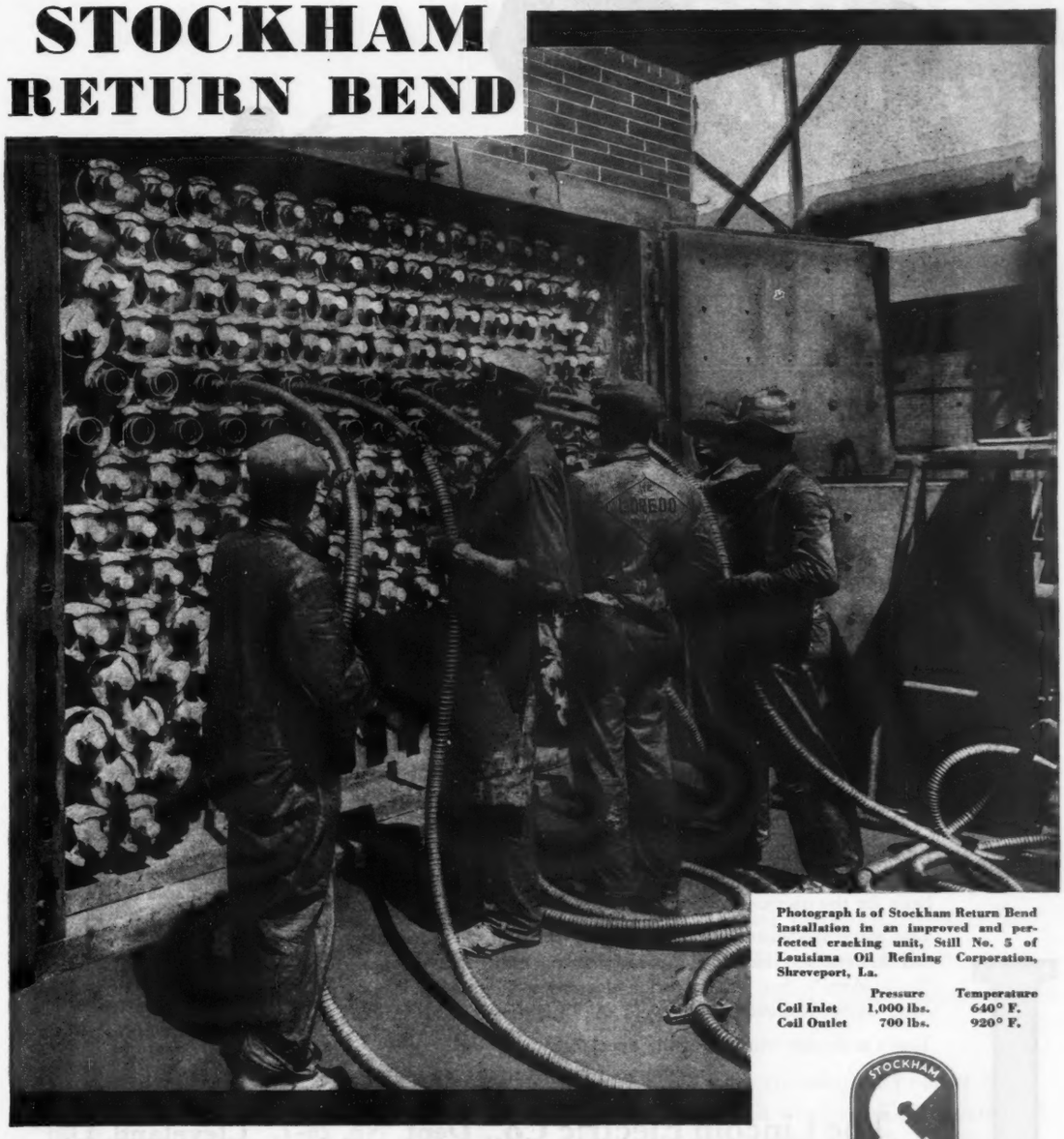
LELAND EQUIPMENT COMPANY
Archer and Guthrie Sts., Tulsa, Oklahoma
Telephones: 4-1114 — L. D. 10

ALAMO IRON WORKS
Santa Clara and Montana Sts., San Antonio, Texas
Telephone: Crockett 69

A 5754-I-R

Approved by LORECO

STOCKHAM RETURN BEND



Photograph is of Stockham Return Bend installation in an improved and perfected cracking unit, Still No. 5 of Louisiana Oil Refining Corporation, Shreveport, La.

	Pressure	Temperature
Coil Inlet	1,000 lbs.	640° F.
Coil Outlet	700 lbs.	920° F.

Louisiana Oil Refining Corporation, Shreveport, La., are most gratified with the successful operation of their installation and are pleased with the part Stockham Return Bends have played in making this improved unit a success beyond expectations. We congratulate them.

STOCKHAM PIPE & FITTINGS CO.
BIRMINGHAM, ALA.

STOCKHAM FITTINGS

There is a
STOCKHAM FITTING
for every oil requirement
CAST IRON, MALLEABLE
ELECTRIC CAST STEEL

"Here, Lad —

What's the idea of leaving this book by Chic Sale on my desk?

I think the subject matter goes a little too far — pretty close to the limit."

"No, Pop —

There's no limit to the products that can be improved by the work of the Specialist.

Take the field of our friend here, 'Arc Welding.'

One would imagine that the economies and improvements of the Specialist end with him . . . but these benefits go beyond him . . . to the welding machine . . . yes, even to the electrode he uses.

Lincoln's specialization on welding has enabled them to bring about developments which have put welding on a more profitable basis for the users. (See 'Stable-Arc' exclusive features).

This same specialization on welding by the Lincoln organization has also enabled them to give to industry not only better machines, 'Stable-Arcs'— but also superior electrodes, 'Fleetweld', 'Stable-Arc', 'New Kathode', 'Stainweld A', 'Lightweld' and 'Anode'.

That's a *double* triumph of the Specialist

— Chic and Double Chic, as it were."

The Lincoln "Stable-Arc" Welder

— welds easier
— makes better welds
— permits greater output because of the steady uniform arc throughout entire welding range, which is the result of:

Variable voltage design
Laminated magnetic circuit
Separately-excited generator field
Double control of welding heat
All steel construction

No other welder has all these features.

The Lincoln Electric Co., Dept. No. 26-7, Cleveland, O.

W-151

"Stable-Arc" LINCOLN WELDER

ECONOMICAL POWER for DRILLING, DRAW WORKS and PUMPS

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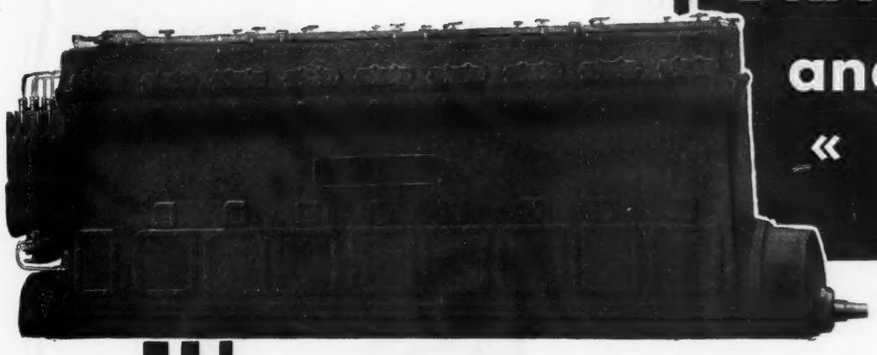

This eight cylinder Type L Fulton-Diesel Engine is finding wide favor in the oil fields for drilling, draw works and pumping. Its speed range — from 300 to 750 RPM — gives it the practical flexibility of a gasoline engine .... Its top speed horse power of 330 provides ample power margin for all oil field work.

The design of this eight-cylinder power plant gives it smoothness in operation — its sturdiness gives it the ability to stand heavy service. Although fully enclosed to protect it from dust, dirt and damage the working parts are easily accessible. Built either as a stationary unit or can be equipped with skids for mobile service.

The Fulton Iron Works Company have also developed proper draw works, pump drives and drilling rigs for this engine. Our representatives located in Dallas, Tulsa and Monroe, La., will be glad to discuss with you the many advantages and economies of Fulton-Diesel Engines and equipment ... Fulton Iron Works Co., St. Louis, U. S. A.

SUCCESSFUL ENGINE BUILDERS FOR OVER SEVENTY-FIVE YEARS

606

FULTON DIESELS

100 TO 2000 HORSE POWER

The Right Combination

for Economical Drilling

PARKERSBURG'S Combination Portable Drilling Machine combines the advantages of steel for strength and rigidity with the features of wood where flexibility is required. The rigid All-Steel Frame is made from structural shapes, riveted and welded. Steel Walking Beam and Steel Wheels all contribute to permanence and freedom from replacements.

In addition to this ideal combination of materials and quality construction, the machine is portable, readily transported by team or tractor, and when on the location it is quickly demounted, set on the usual foundation timbers and keyed to the sills to operate as a Standard Rig.

It moves on wheels, operates on sills, combining efficiency and economy. Due to this feature the Parkersburg Combination eliminates much of the vibration common to machines operating on wheels. It permits faster and deeper drilling and all-around superior performance.

The 4½-Inch Combination Machine, recommended for drilling to 2500 feet, can be used with 66-Foot "A" Type or Three-Piece mast.

Practical simplicity and fewer parts are added advantages, resulting from Parkersburg's thirty-three years of experience which make this machine "the Right Combination" for profitable drilling.

Complete details and prices gladly furnished from our Main Office, or ask any Parkersburg Representative.

The Strength of Steel
The Flexibility of Wood
Engineered by
PARKERSBURG

THE PARKERSBURG RIG AND REEL CO.
TRADE MARK REG.

Moves on Wheels
Works on Sills

PARKERSBURG PRODUCTS

Portable Drilling Machines
(Wood and Combination-Steel)
Steel Wheels (Bull, Band and Calf)
Rig Irons
Steel Derricks and Crown Blocks
Chain-Driven Sand Reels and Bailing Reels
All-Steel Standard Rigs
Bolted Steel and Aluminum Tanks
Miscellaneous Drilling Equipment
Steel Walking Beams and Pitmans
We subscribe to A.P.I. Standards

THE PARKERSBURG RIG AND REEL COMPANY

Main Offices and Works
PARKERSBURG, WEST VIRGINIA
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Branches In All Active Fields

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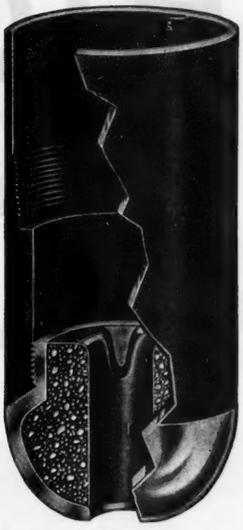


SHOE WITH CONCRETE GUIDE

LARKIN

Aluminum

Reinforced Concrete

Floating and Guiding Equipment

ALUMINUM REINFORCED CONCRETE FLOAT COLLAR

THE LARKIN ALUMINUM FLOATING AND GUIDING EQUIPMENT is a combination of Aluminum Alloy Casting and Concrete.

An Aluminum Alloy Valve, weighing less than six pounds for 9⅝-inch casing, with a machined water-tight valve seat is screwed into the lower end of an interior corrugated collar. The entire length of the collar between casing threads is reinforced with concrete, thus giving more friction space for the concrete in addition to the screwed joint. The valve seat is fitted with four one-quarter-inch pipe plugs which can be removed to equalize or relieve pressure when two or more float collars are used.

Aluminum Alloy Casting is one-third the weight of Cast Iron and has a tensile strength of nineteen thousand to twenty-three thousand pounds per square inch—about twenty-five per cent stronger than Cast Iron. Aluminum Alloy has a specific gravity of 2.85 and the mud-laden fluid 1.80. It is readily pulverized, which, together with its low specific gravity, causes it to enter into suspension with the mud-laden fluid.

Concrete of high compressive strength, with water courses at upper end, is moulded into the recessed coupling and aluminum valve body, and in addition to the strength of the concrete has the added strength of the screw joint.

The Larkin Shoe with threaded Aluminum Guide reinforced with Concrete, has all the advantages of the Cast Iron or Concrete Guide, but has, in addition, the reinforcement of the concrete, which not only gives greater strength but is more easily removed.

COMPLETE ROTARY HOLE EQUIPMENT

Shoes with Aluminum Guides reinforced with Concrete
Shoes with Concrete Guides
Combination Float Shoes with Aluminum Valves and Guides reinforced with concrete
Float Shoes with Aluminum Valves and Guides reinforced with concrete
Float Collars with Aluminum Valves reinforced with concrete
Aluminum Reinforced Concrete Float Shoes
Drill Pipe Floats
Cement Dump Bailers

The above equipment is also furnished with Cast Iron Valve and Guides reinforced with concrete.

For Sale by Supply Stores

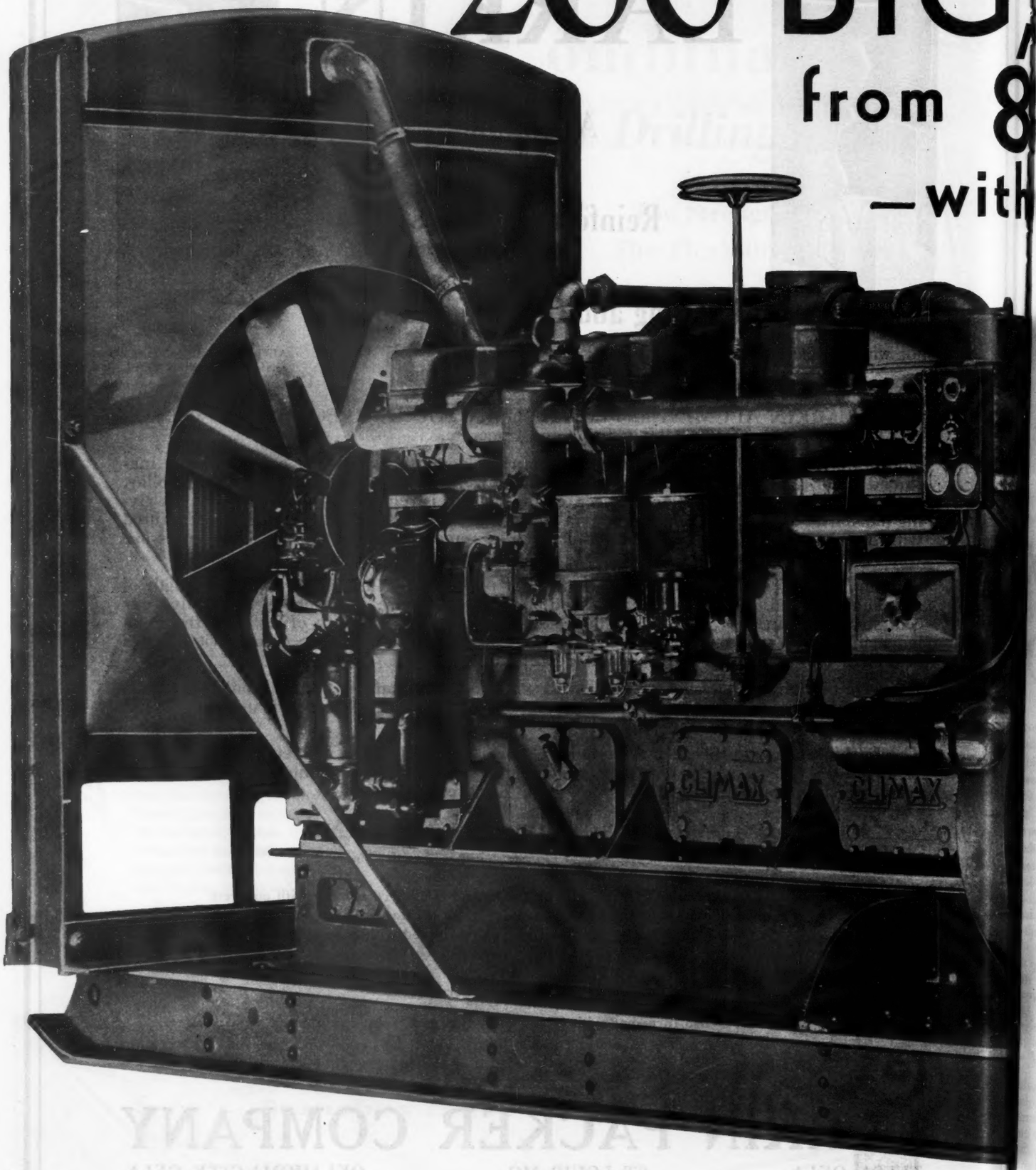
LARKIN PACKER COMPANY

TULSA, OKLA. ST. LOUIS, MO. OKLAHOMA CITY, OKLA.

200 BIG

from 8

—with



SCANDINAVIA BELTING

of Solid Woven Construction—Built to Meet the Exacting Demands for a BETTER Oil Field Belt

—ENORMOUS TENSILE STRENGTH
WILL NOT SUFFER FROM PEAK LOADS

—UNBELIEVABLE ELASTICITY OF WEAVE
ABSORBS THE SHOCKS

—MINIMUM OF STRETCH
STEADY, UNINTERRUPTED PRODUCTION

—EXTREME PLIABILITY
NO BOOTLEGGING

Exceeds in stretch, tensile strength and every respect, the A. P. I. specifications

"SCANDINAVIA"
Woven Asbestos
BRAKE LINING
for
STEEL ROTARY DRUMS

"SCANDINAVIA"
Woven
ENDLESS BELTS
for
SHARPLES CENTRIFUGALS

"There Is No Substitute for Quality"

SCANDINAVIA BELTING CO.

Leaders in the Field of Friction Materials Since 1880

Executive Offices: Newark, N. J. **Mills: Charlotte, N. C.**

In the Mid-Continent Field
MID-CONTINENT SUPPLY COMPANY
Fort Worth, Texas
Stocks carried—Houston, Fort Worth, Odessa, Shreveport, El Dorado, Tulsa

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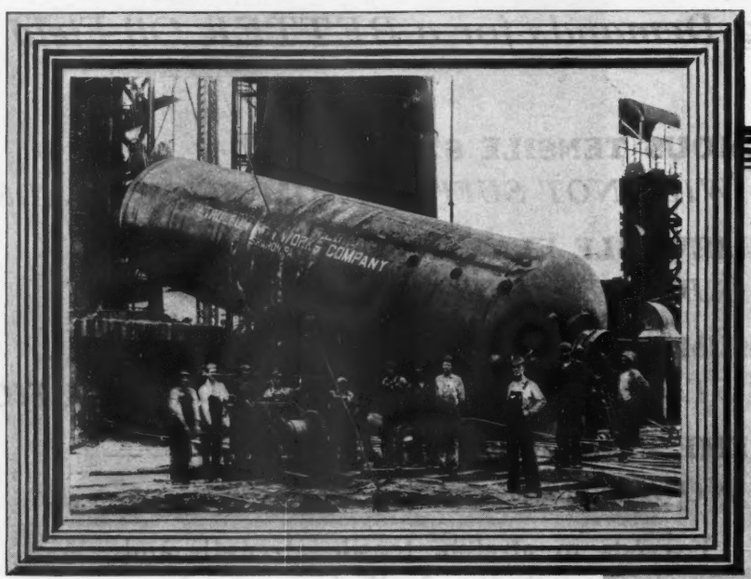
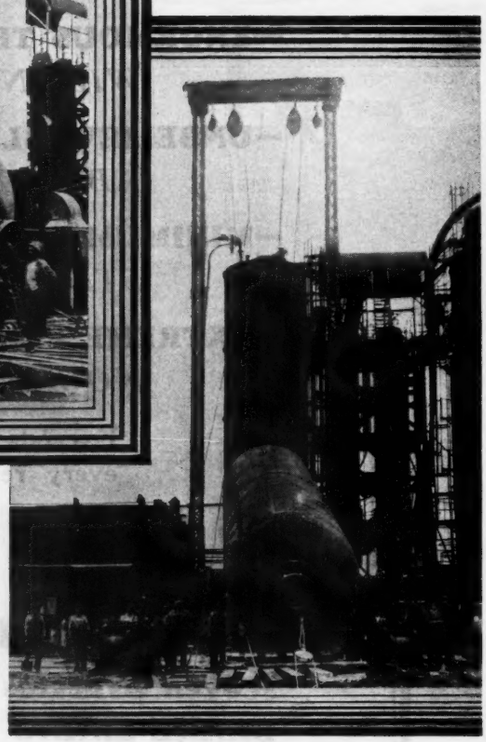
Tulsa, Okla.

In California
LELAND BROS. CO.
304 East 3rd St.,
Los Angeles, Calif.

Another Refiner. . .



Reaction Chamber
2½" wall—
10' dia. x 40' long—
176,000 lbs.

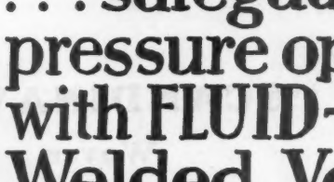


. . . safeguards high pressure operations with FLUID-FUSION Welded Vessels . .

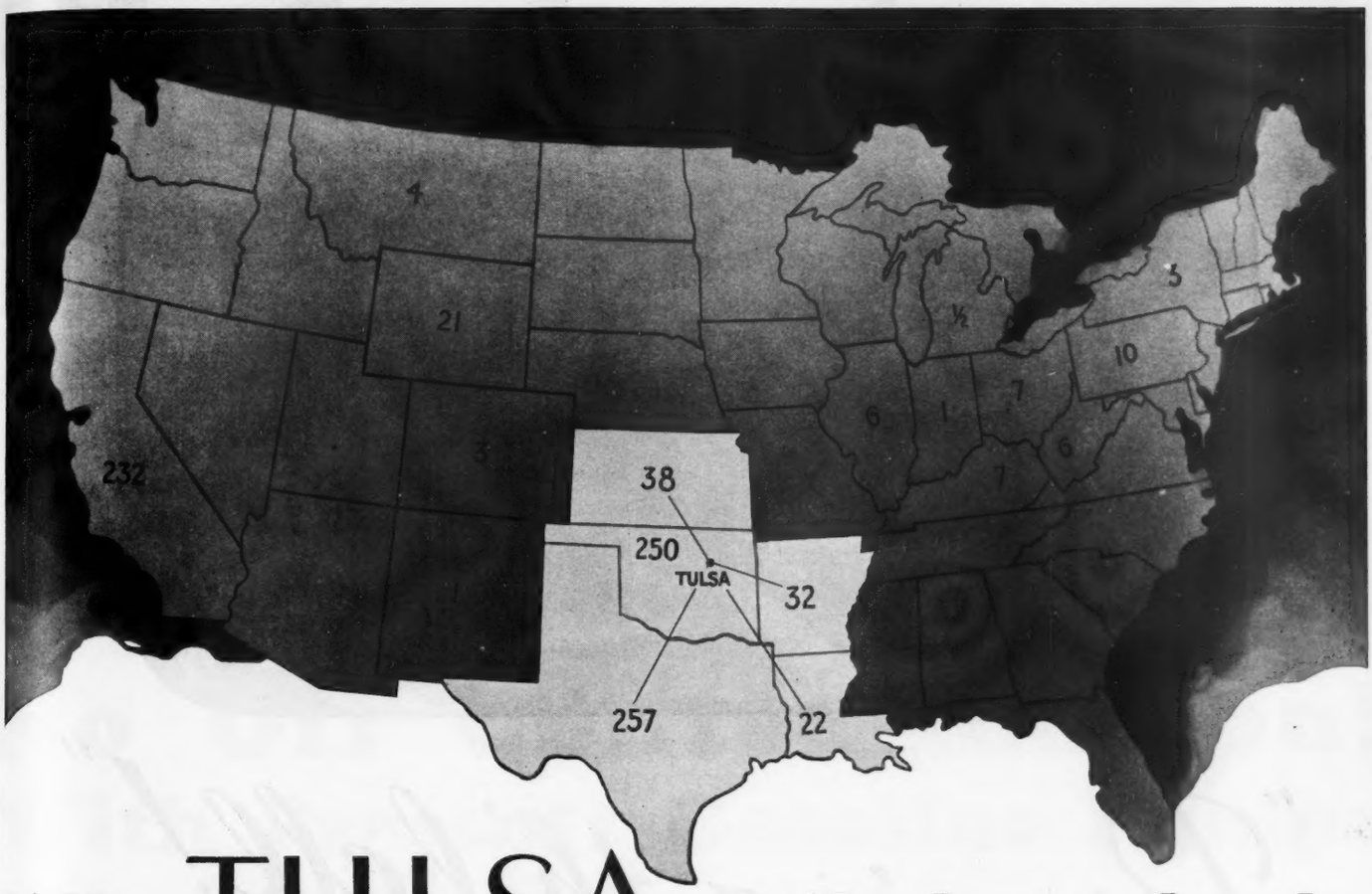
WITH the installation of 8 of the above Reaction Chambers designed for 250 lb. pressure at 900° F. another refiner has settled the question of safe high pressure operations.

When the refiner considers the impressive service record of Fluid-Fusion welded cracking vessels, their great strength and high corrosion resistance, and the exact precaution of their manufacture, from the use of special discard steel to complete furnace annealing of every vessel, he wisely concludes that safety and peace of mind recommend the use of Fluid-Fusion welded vessels for high pressure, temperature or corrosive operations.

Furnished with walls up to 6 inches thick in dimensions set by transportation limits.



The PETROLEUM IRON WORKS COMPANY
SHARON, PA.
NEW YORK CHICAGO TULSA



Why TULSA *will always be the* Oil Capital *of the* World

Forty-five per cent of the world's oil is taken from the area set off above. The figures indicate millions of barrels. This dominant area not only leads in volume but is the region from which practically all activity in the oil world has emanated since the production of petroleum became a major industry. Going further back, Tulsa is the seat of activity from which this great central oil region developed. Compared to the "house that Jack built", Tulsa is the city that built the region that built the oil world —that built and continues to build Tulsa. No city is more closely associated with or derives more from the discovery of oil in any field, anywhere—than Tulsa. Although tremendous fields may be discovered, which may shift the lead in production to other territories, Tulsa will always be the mother city of petroleum and the "Oil Capital of the World".

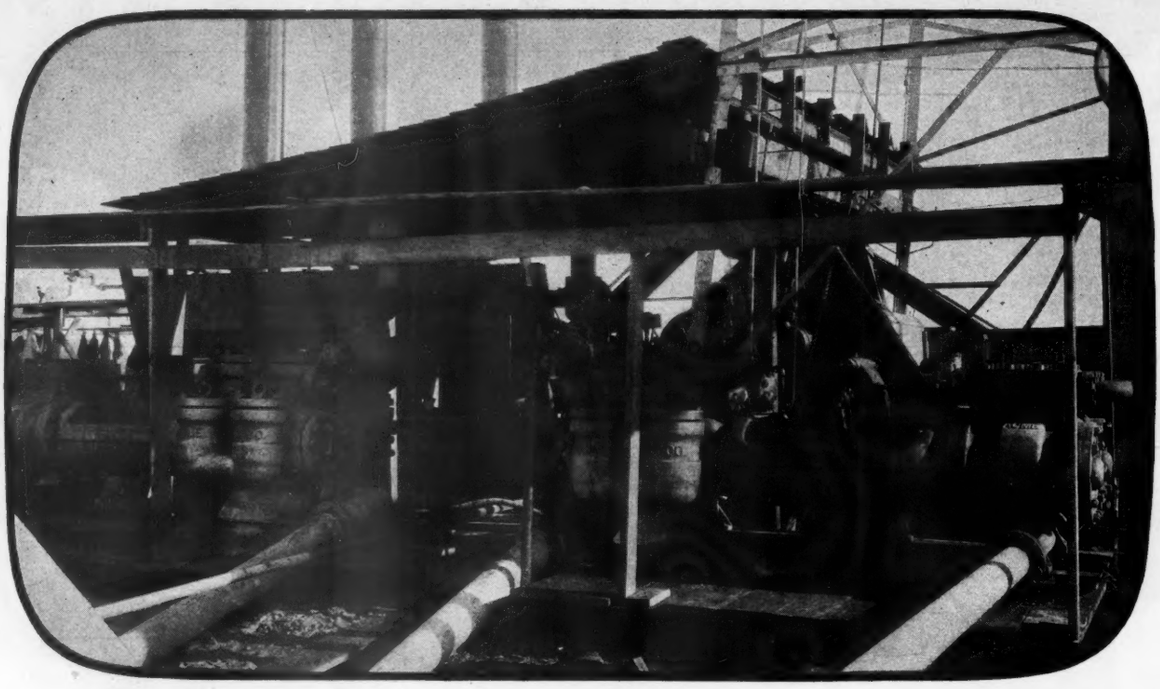
Tulsa is headquarters for many leading oil companies, among them, Mid-Continent, Barnsdall, Independent, Skelly and Transcontinental. Hundreds of oil operators, old in the business, conduct their operations in many fields from Tulsa as headquarters. Approximately 300 manufacturers and distributors of oil field and refinery equipment are located here, making Tulsa the world headquarters for oil industry equipment buying. Tulsa's annual volume of business in this division alone approaches $400,000,000.

The International Petroleum Exposition, official educational and sales event of the industry, brings to Tulsa each year thousands of oil men from every oil producing area in the world. The Tulsa Purchasing Agents' Association, numbering members from all the important oil companies in the Mid-Continent Field, constitutes the greatest single factor in the industry for controlling the purchase of supplies and equipment. The Association maintains a permanent exhibit of Tulsa made and distributed oil equipment. The Western Petroleum Refiners' Association, the Mid-Continent Oil and Gas Association, The Association of Natural Gasoline Manufacturers, American Association of Petroleum Geologists, and other leading national oil and gas associations, have their headquarters in Tulsa.

Aside from the oil industry, Tulsa has other advantages as a manufacturing, sales and distributing center which have been contributory to its position as the Oil Capital. Tulsa's every advantage is pointed out in our new 100-page Industrial Survey of Tulsa, which will be sent to you if you will mail us your request. The Industrial Department of the Tulsa Chamber of Commerce will gladly compile for you more exhaustive information on special subjects, without obligation. Address Dept. P, Tulsa Chamber of Commerce.

TULSA

"Oil Capital of the World"



"Ringing th' bell!"

—All the boilers, pumps and engines in this outfit are ACME and TICO.

—Plenty of power, easy handling, free from repairs, dependable 24 hours per day—week in and week out.

—That's what the Stanfford Drilling Company of Caldwell, Kansas, mean by "ringing th' bell."

[Isn't this the kind of outfit that will PROFIT YOU most?]

TITUSVILLE OIL COUNTRY MACHINERY

Twin Cylinder Steam Engines
Single Cylinder Steam Engines
TICO 2-cycle Gas Engines
TICO 4-cycle Gas Engines
Rotary Drilling Equipment
Band Wheels—Geared Powers
A. S. M. E. Code Portable Boilers
(Locomotive—Return Tubular)
Heating and Power Boilers
Air Compressors—Acid Blowers
Tanks and Steel Plate Work
Flapper Valve Pumps
Rotary Slush Pumps
Pressure and Vacuum Valves

BUILT WITH RESERVE RUGGEDNESS

THE TITUSVILLE IRON WORKS COMPANY
Division of Struthers Wells-Titusville Corporation
TITUSVILLE, PA.

Mid-Continent Office: 503 Exchange National Bank Bldg., Tulsa, Okla.
For Kansas, Oklahoma, New Mexico and Northwestern Texas: International Supply Co., Tulsa, Okla.
For California: California Machinery & Supply Co., 2449 Hunter St., Los Angeles, Calif.
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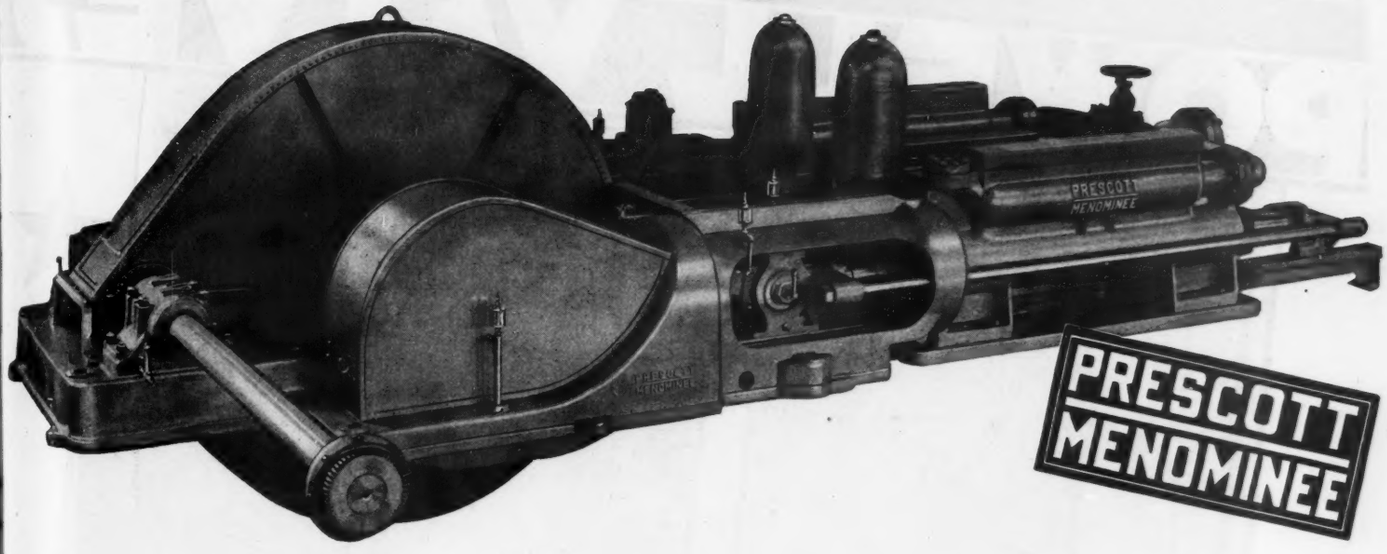
TIW-67

TITUSVILLE OIL FIELD EQUIPMENT

GAS ENGINES ▲ PUMPS ▲ BOILERS ▲ DRILLING RIGS ▲ STEAM ENGINES

No Leakage!



No Oil Contamination!
With Prescott Gasoline Pumps

THE special stuffing box construction on Prescott Gasoline Pipe Line Pumps positively prevents leakage of gasoline or contamination with lubricating oil.

Six of these 5″ x 24″ Prescott Duplex Double Acting Plunger Type Gasoline Pumps were recently installed on the main line of the Tuscarora Pipe Line Co. Each pump is driven by a direct connected 150 H.P. electric motor.

Prescott Reciprocating Plunger Pumps are built for either oil or gasoline—for any capacity or pressure, and for either electric motor, gasoline or diesel engine drive.

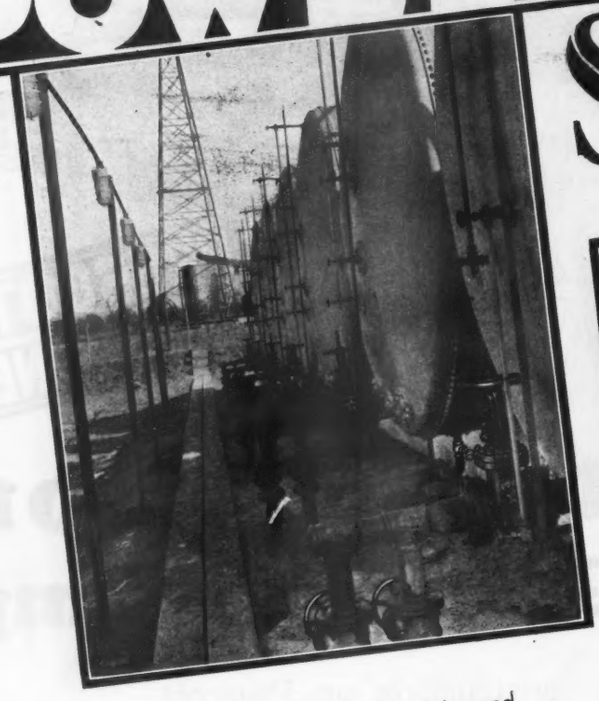
Catalogues and performance data on request.

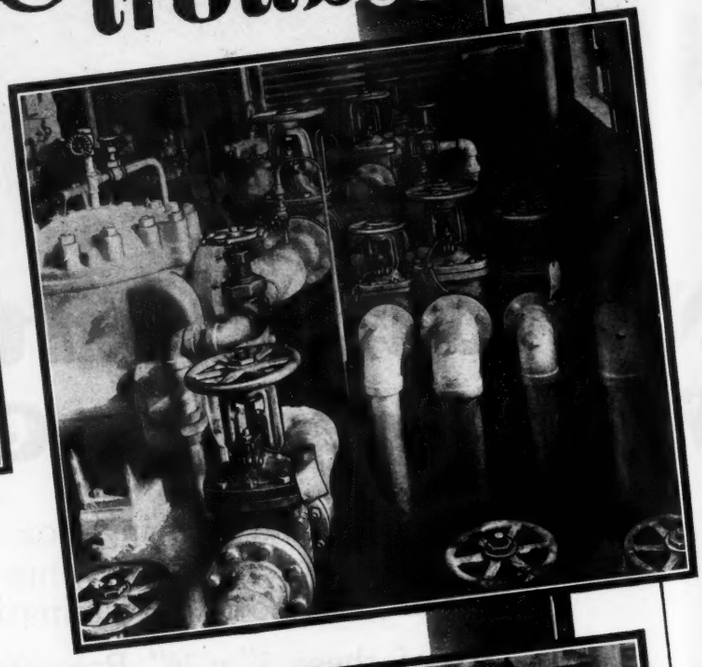
The Prescott Company
Menominee, Michigan, U. S. A.

Pumps for deep mines ~ Pumps for pipe lines

O&GJ 7-31 Gray

Have you any control problems?...LET POWELL VALVES Solve your troubles ★





Powell service engineers are eager to advise and assist you in selecting the proper valve for most every service requirement.

Whether you want valves to control high pressure and high temperature steam lines, or oil, gas, water, and air lines—there are Powell Valves to meet your requirements.

Made for pressures from 75 to 2000 pounds, at temperatures to 1000 degrees Fahrenheit, Powell Valves are processed not only from bronze, iron and steel, but also from special alloys to resist the corrosive action of acids, gases and strong alkaline solutions.

Try Powell Valves on your most severe service line! Let their performance determine their merit.

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Cincinnati, Ohio

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90 West Street
New York, N. Y.

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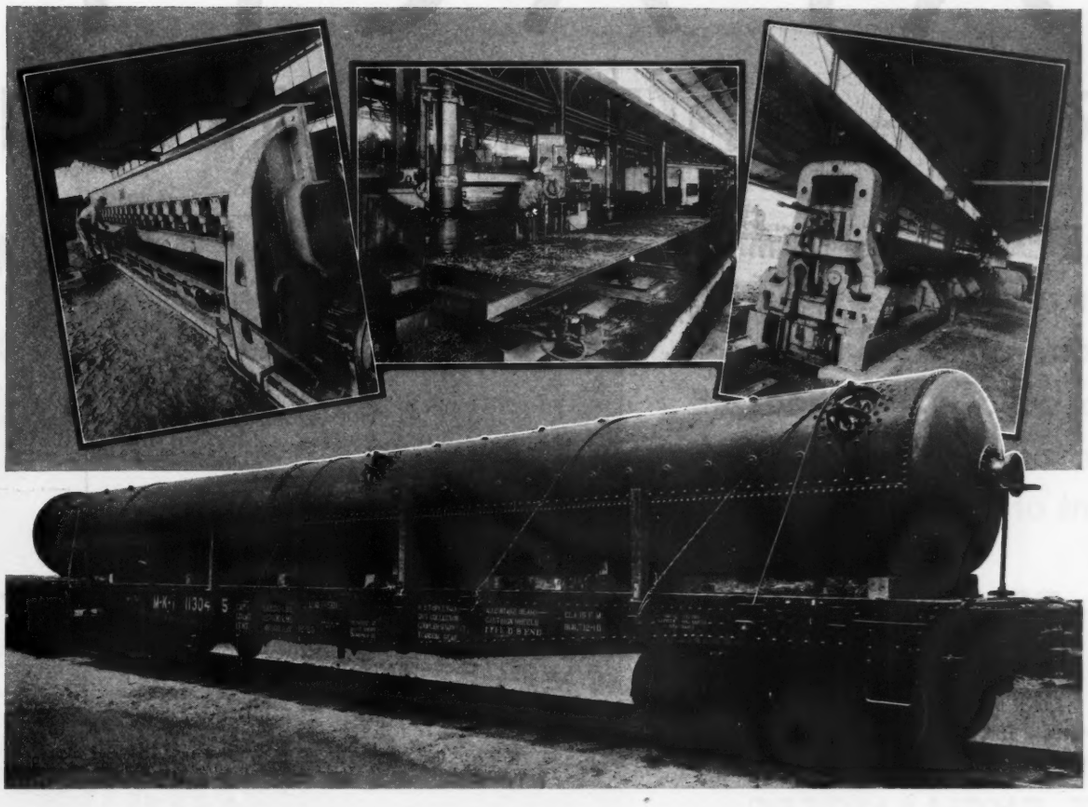
55 East Wacker Drive
Chicago, Ill.



A 36-foot Cylinder With No Circumferential Seams

. . . and the machines which make it possible

The facilities of Wyatt's for producing Cylinders and Towers in one piece up to a maximum length of 36 feet is well illustrated above. ¶A 36-foot Plate Planer which reverses automatically bevels the plate for welding or caulking. Plate Bending Rolls 36′-6″ between housings roll the plate to a true circle. A 36-foot automatic arc welder welds the joints when the cylinder is of welded construction. A 125 Ton Pneumatic Riveter drives the rivets in riveted construction after holes have been drilled by Pneumatic Drill Press shown in center. ¶*Results*—Towers of gun-barrel effect in trueness and smoothness. ¶Two large plants to serve you, One at Dallas—One at Houston.

WYATT METAL & BOILER WORKS
DALLAS *Capital $1,000.000* HOUSTON

Wyatt's **WYATT**
METAL & BOILER WORKS

CAPACITY
FOR MASSIVE CONSTRUCTION

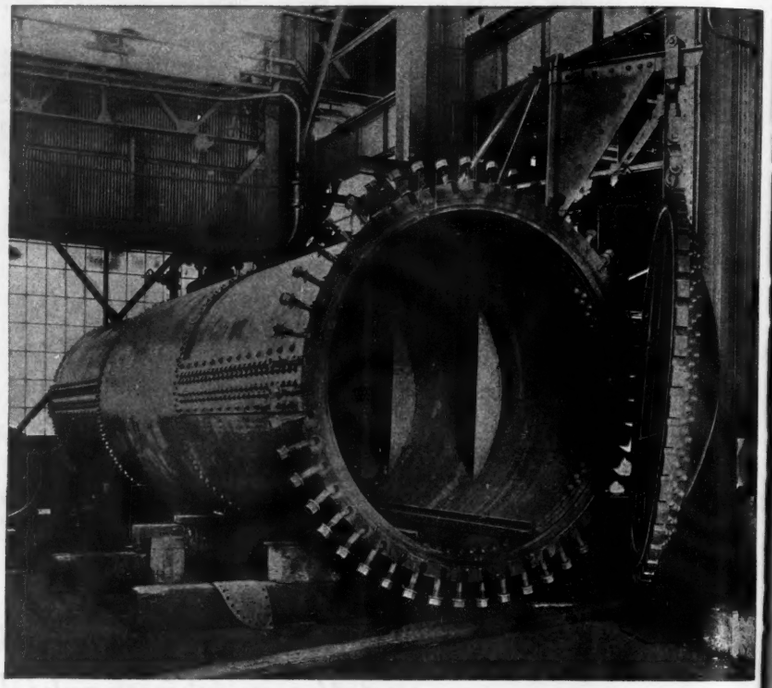
WE ARE EQUIPPED for massive construction and quantity production. Our facilities permit us to build in our shops at one time numerous pieces of equipment of large proportions.

TOWERS
STILLS
CONDENSERS
HEAT EXCHANGERS
TANKS...

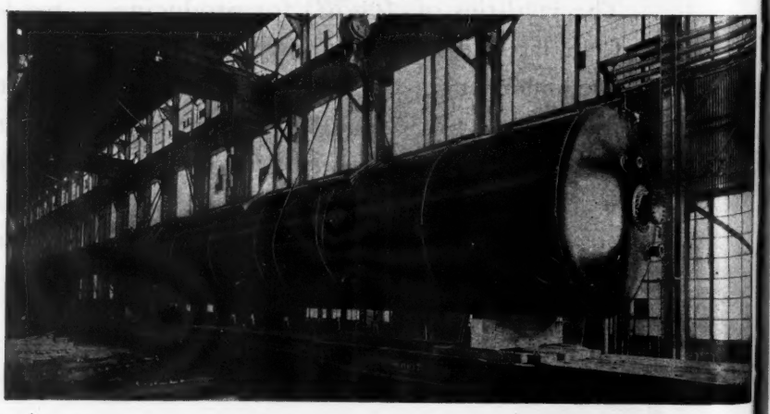
SPECIAL HEAVY BUILT TANKS . . .
RIVETED AND WELDED CONSTRUCTION

STILL BOTTOMS
ANGLE WORK
FABRICATED
PLATE WORK

Rail or Water Shipments
Estimates on Request

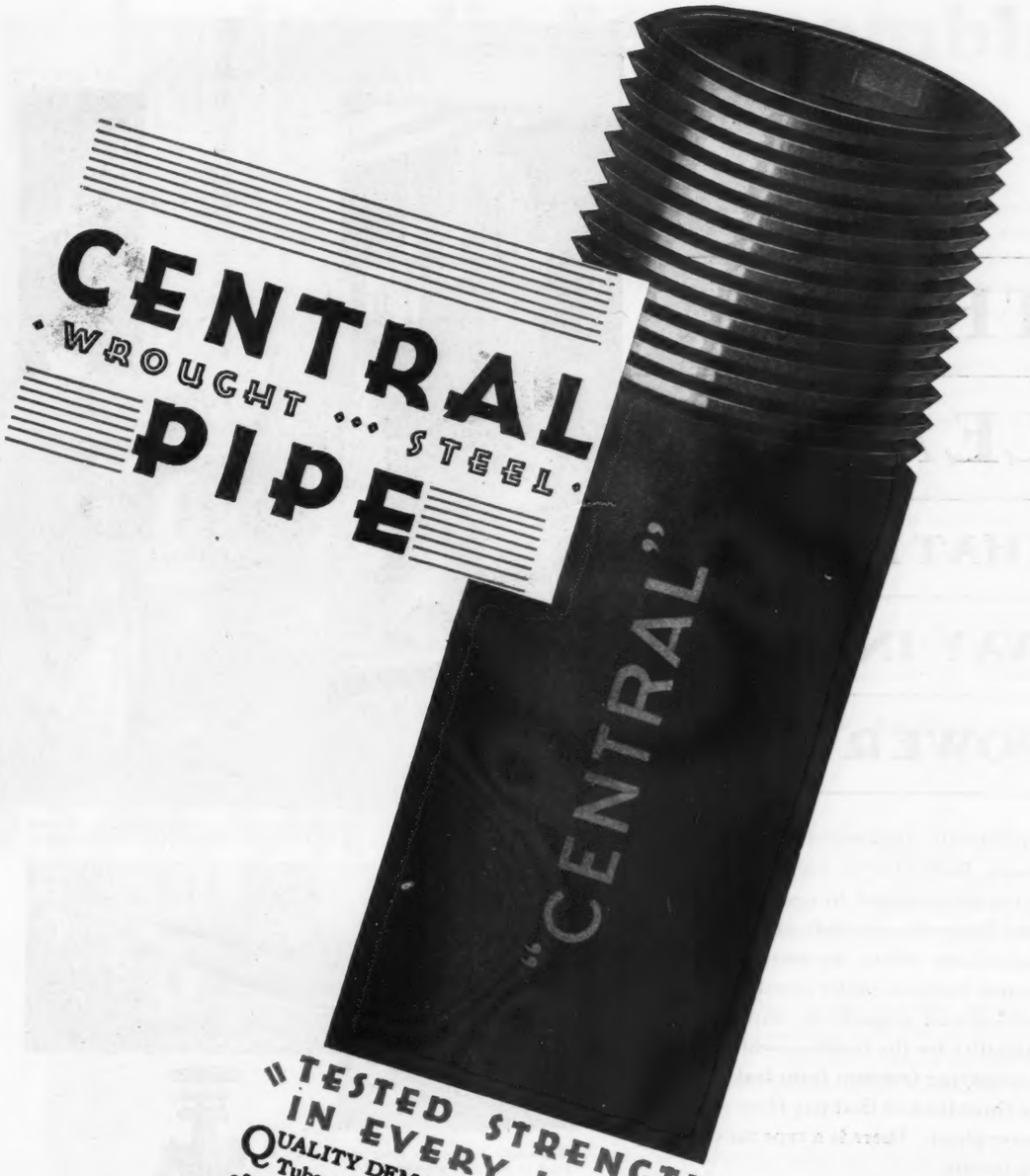


IMPREGNATOR SHELL



TOWER—13' 4" DIAMETER x 95' HIGH—WEIGHT 250,000 LBS.
HANDLED AND SHIPPED IN ONE PIECE

SUN SHIPBUILDING & DRY DOCK CO., Chester, Pa.



"TESTED STRENGTH IN EVERY LENGTH"

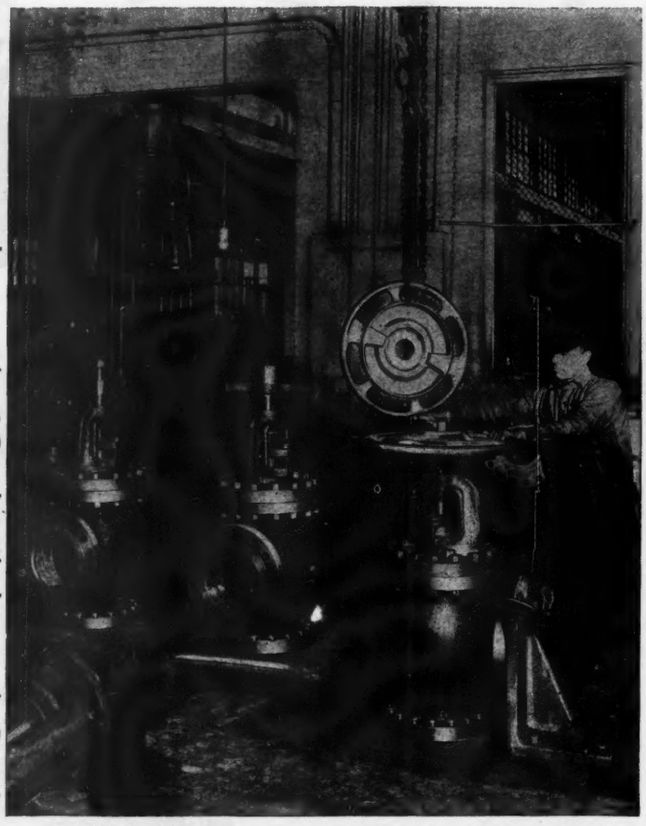
QUALITY DEMAND alone built the great Central Tube plant at Ambridge, with an annual capacity of more than a quarter million tons of the highest grade steel pipe that modern manufacturing facilities can produce.

Soft, ductile steel... ends finished for any type of joint ...are important factors responsible for the reputation "Central" Wrought Steel Pipe enjoys today.

For 100 per cent satisfaction specify "Central."

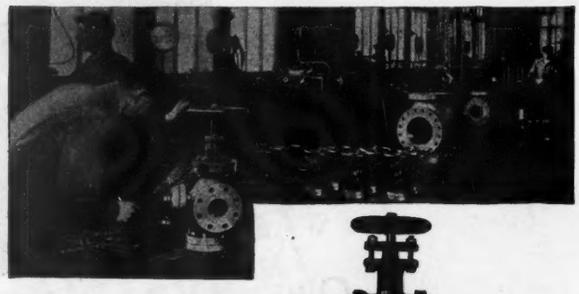
CENTRAL TUBE COMPANY, PITTSBURGH

THREE LEADERS THAT PAY THEIR WAY IN ANY POWER PLANT



These 10" No. 705 non-return valves are installed in a large oil refinery. Edward (patented) impactor handwheels are used for closing against boiler tests pressures.

Permanently dependable for superheated steam, feedwater or blowdown. Edward valves are confined to certain clearly defined lines—for a widely growing market. Non-return valves to assure automatic control between boiler nozzle and header—drumhead stop-check valves of proved reliability for the feedlines—blowoff valves of satisfying freedom from leakage—these are three leaders that pay their way in any power plant. There is a type for every piping layout.



Hydrostatic pressure is being applied to No. 548, drumhead stop-check valve—water and air tests are made both above and below the disc.

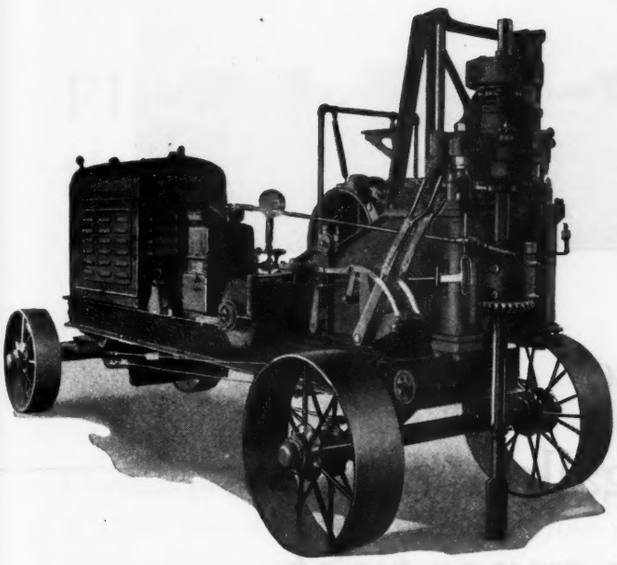
Edward blowoff valves are made for pressures up to 2000 lbs. Cut shows Valves Nos. 341 and 343, which save money in the 250# W.S.P. range.

THE EDWARD VALVE & MANUFACTURING CO.
EAST CHICAGO - - - INDIANA

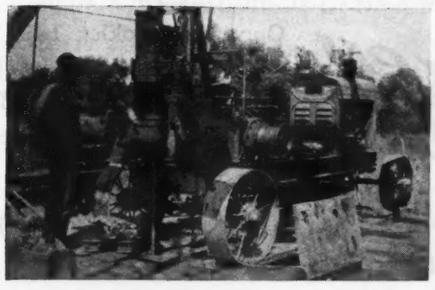
EDWARD VALVES

TRADE MARK REG. U.S. PAT. OFFICE

Rotary table drive and hydraulic feed combined



ROTACORE



Rotacore Structure Drilling in Kansas

OIL OPERATORS are always on the alert for changes and improvements which will eliminate waste time and increase the effectiveness of their structure drilling. Rotacore's big new feature accomplishing these results is the combination of rotary table drive with hydraulic feed, permitting immediate change from brake feed, as in rotary drilling, to hydraulic feed, as in diamond drilling! The change is quickly accomplished by loosening or tightening four chuck bolts, as required. Briefly, Rotacore combines principles of both diamond drill and rotary drill operation.

Consider the advantages of this quick change from brake feed to hydraulic feed: with brake feed the grief stem can be run in without continual rechucking, but if a hard layer is encountered, hydraulic pressure can be immediately applied by tightening the chuck bolts.

Rotacore's capacity is 3000 feet of N size hole, 2-13/16 inches in diameter, recovering 2-inch core. The hydraulic has a length of feed of 18 inches, and lifting capacity of 7 tons.

Rotacore is powered with a Waukesha industrial type 45 H. P. motor complete with multiple disc dry plate clutch, 3 forward speeds and reverse.

A rotary table by means of which drill rods are rotated, is built in with recessed drive bushing through which passes a fluted or square grief stem coupled to the upper end of the rods. The grief stem can slip through the table while being rotated, the downward feed being controlled either by the hydraulic cylinders or by the cable from the drum.

All controls, including motor throttle, are at the operator's finger tips. A cat-head has been added in response to the necessities of field experience. The entire unit is mounted on a substantial steel truck with front wheels 8 inches and rear wheels 10 inches in width.

Write to our branch office at Ponca City, Oklahoma, or to Minneapolis for your copy of Rotacore bulletin No. 32.

E. J. LONGYEAR COMPANY
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These 80,000-gallon tanks are covered with vapor-tight, gas-tight, static-proof roofs

PROTECTION against lightning, protection against internal gas pressure, provision for normal motion of the shell. Flexible, metal eaves construction. Insulated asbestos built-up roofing with highly reflecting surface. Economical—100% safe. *The Carey Oil and Gas Tank Roof!*

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Our free booklet tells just what you want to know about this widely endorsed Tank Roof. Write for your copy.

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107 Buffalo Street
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Ask Us About These Other Carey Products . . .

Carey Asbestos Pipe Line Felt—Safeguards oil and gas lines against corrosion—insures efficient pipe line operation at minimum cost.

Carey Improved Pipe Line Coating—Cold application to exposed and underground gas and oil lines.

Carey Pipe Line Enamel—For hot application to gas and oil lines.

Carey Heat Insulations—For boilers, stills, steam-pipes, condensers, etc. Carey Hi-Temp No. 12; Carey Asbestos; Carey 85% Magnesia.

Carey Corrugated Asbestos Roofing and Siding—Reduces fire hazard to a minimum. Use it for meter houses, distillation sheds, refineries and similar buildings.

Carey Asbestos Built-up Roofing—Used where fire hazard and acid fumes are present.

Carey Feltex Built-up Roofing—For vast roof areas—where contraction and expansion are present, and where there is excessive vibration. Also specified for use in combination with Carey Asbestos Built-up Roofing.

Carey Prepared Roofings—Roll roofing for temporary construction such as temporary field buildings, etc.

FIRE is only the BEGINNING

What about after the fire?

Physical property can be replaced. Your fire insurance takes care of that. But what about profits while you are rebuilding? What about all the expenses you must continue to meet—taxes, mortgage payments, bank obligations, salaries to employees who must be kept on the payroll during the reconstruction period, interest on indebtedness and all the rest of the list.

The Frates Company can show you how to make your insurance protection go *all* the way. Not just up to the payment of a claim but over the long and costly period that follows, too—until your property is again producing income.

The men on our staff are familiar with the insurance problems of the oil industry in all its branches.

Call us now. It's the sensible thing to do and you will hear something new and something interesting about your insurance.

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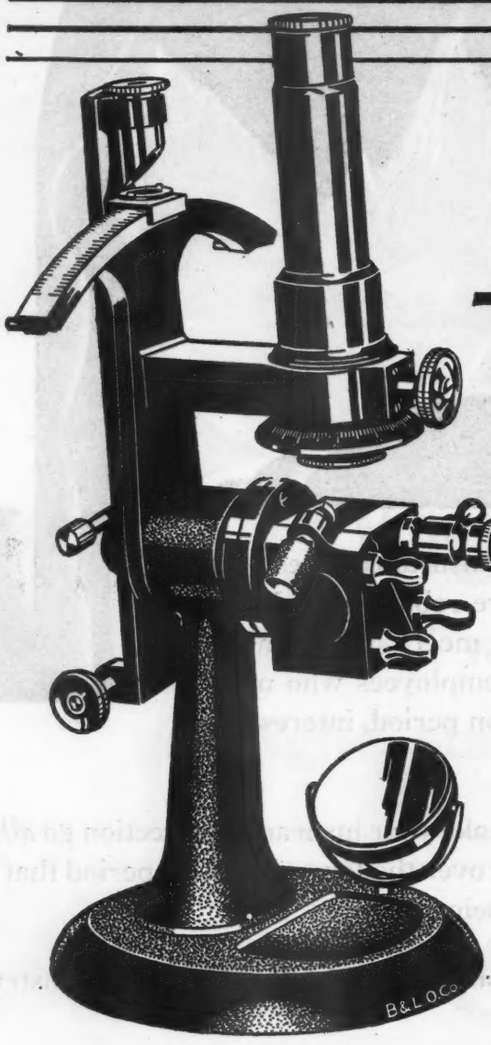

B&L Abbe Refractometer

That you may know your product — better » »

BY MEANS of the B & L Abbe Refractometer you can determine the strength and purity of solutions, the proportion of mixture of two liquids, percentage of foreign matter in a substance and many other valuable facts.

Wherever dispersion or refractive index of a fluid, solid or plastic body is an indication of its qualities, the B & L Abbe Refractometer will determine them. Let this instrument help you to keep up the quality of your product.

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TO GREATER VISION THROUGH OPTICAL SCIENCE
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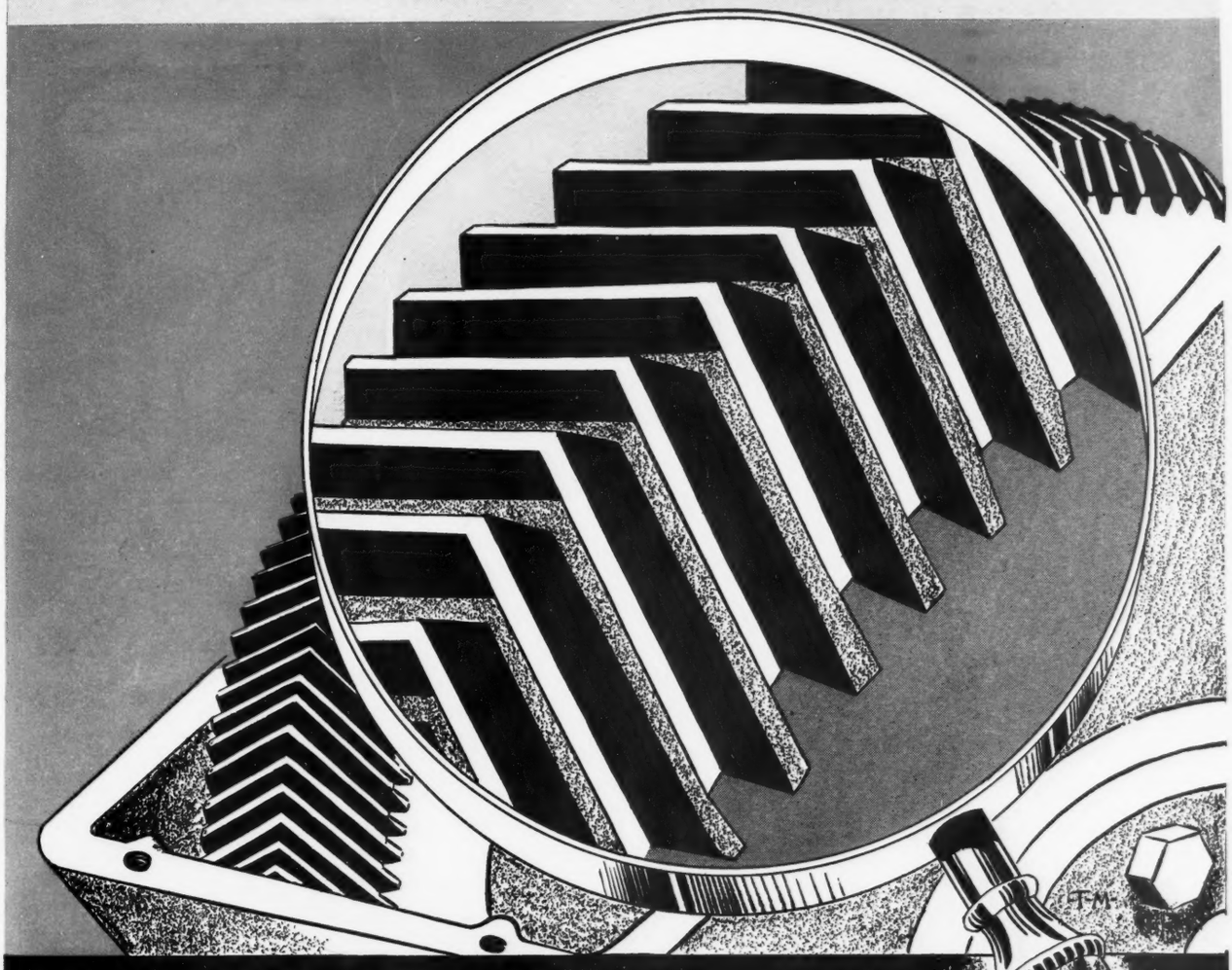
MAKERS OF ORTHOGON EYEGLASS LENSES FOR BETTER VISION

GASO PUMPS INVITE THE CLOSEST INSPECTION



Close inspection of Gaso Pumps reveals features which are reassuring to the purchaser—correct design in accordance with the most advanced engineering principles—materials carefully selected for suitability and quality—workmanship of an accuracy made possible only by a combination of complete mechanical facilities and workmen especially trained to Gaso standards of precision. Gaso Pumps are built exclusively for the industry which is so crammed with action that conditions of usage are often severe in the extreme. And these pumps are built to deliver pleasing service in spite of the excessive demands to which they are subject.

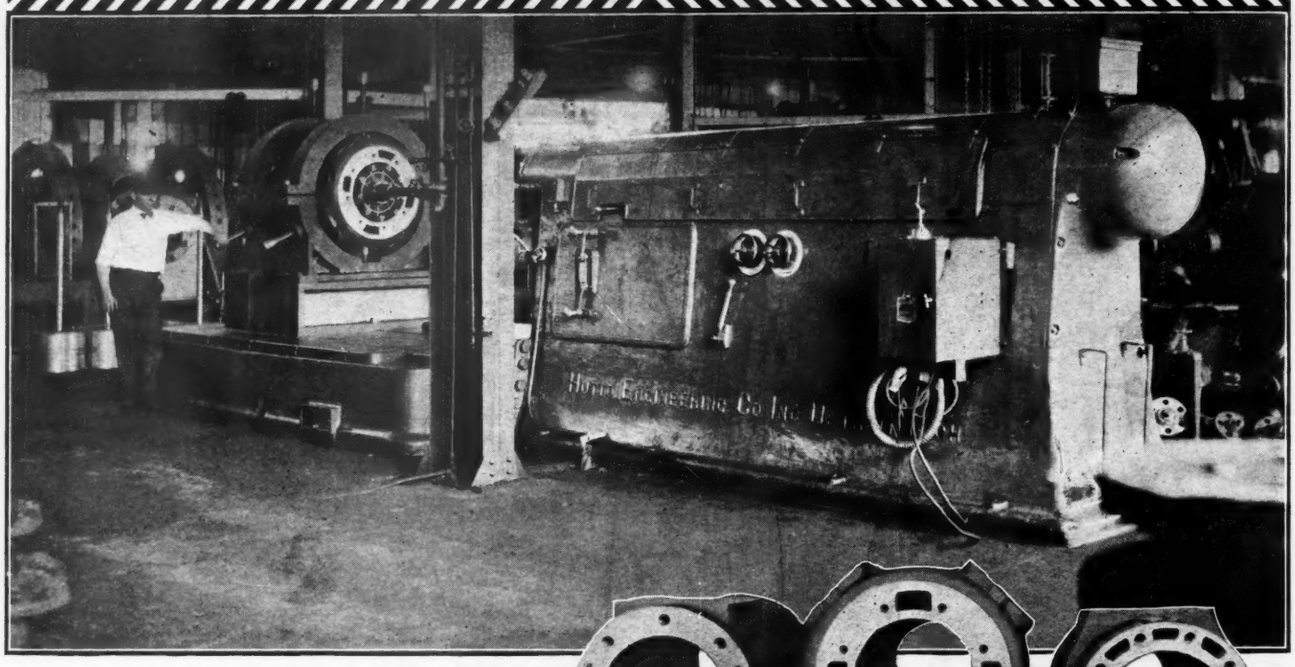
Send your requirements for full information regarding Gaso Pumps to meet any oil industry need.

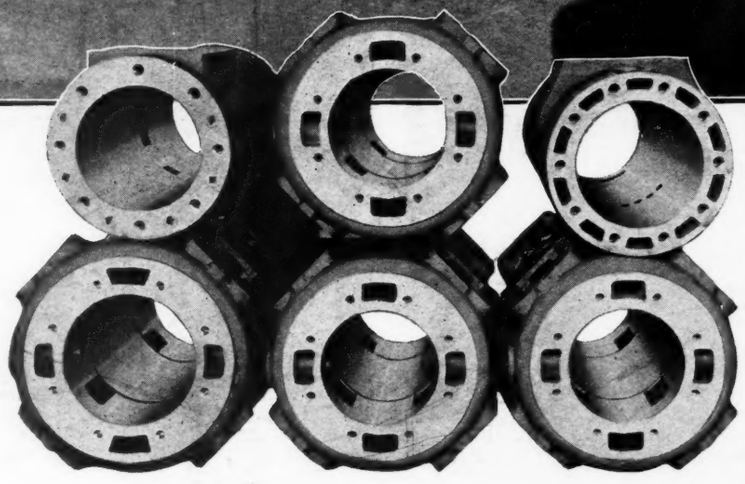
GASO PUMP & BURNER MFG. COMPANY, Tulsa, Okla.
Dallas, Texas — New York, N. Y.

GASO PUMPS

for every oil industry need

Another CLARK Improvement





CYLINDER BORES ARE HONED TO A SMOOTH, MIRROR-LIKE SURFACE

Above is shown a huge cylinder honing machine in operation in the CLARK plant. Below are shown cylinders after honing.

Buyers of CLARK Engines and Compressors now profit by another CLARK improvement—a honing process which puts a smooth, mirror-like surface on the bore of both power and compressor cylinders. Piston rings take a perfect fit with surprising quickness. Most of the first year's wear is eliminated . . . For more than 50 years Clark Bros. Company have given customers the benefit of every development which could improve the efficiency and economy of CLARK machines.

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